Acer AS8950G

SERVICEGUIDE

Revision History

Refer to the table below for the updates made to this AS8950G service guide.

Date	Chapter	Updates

Service guide files and updates are available on the ACER/CSD Website. For more information, go to http://csd.acer.com.tw.

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Conventions

The following conventions are used in this manual:

⚠ WARNING:
Indicates a potential for personal injury.

⚠ CAUTION:
Indicates a potential loss of data or damage to equipment.

+ IMPORTANT:
Indicates information that is important to know for the proper completion of a procedure, choice of an option, or completing a task.

The following typographical conventions are used in this document:

- Book titles, directory names, file names, path names, and program/process names are shown in *italics*.

  Example:

  the *DRS5 User's Guide*

  /usr/local/bin/fd

the */TPH15spool_M* program

- Computer output (text that represents information displayed on a computer screen, such as menus, prompts, responses to input, and error messages) are shown in constant width.

  Example:

  ```
  [01] The server has been stopped
  ```

- User input (text that represents information entered by a computer user, such as command names, option letters, and words) are shown in constant width bold.

  Variables contained within user input are shown in angle brackets (< >).

  Example:

  At the prompt, type run **<file name> -m**

- Keyboard keys are shown in ***bold italics***.

  Example:

  After you enter the data, press ***Enter***.

General information

Before using this information and the product it supports, read the following general information.

This service guide provides you with all technical information relating to the basic configuration for Acer's global product offering. To better fit local market requirements and enhance product competitiveness, your regional office may have decided to extend the functionality of a machine (such as add-on cards, modems, or extra memory capabilities). These localized features are not covered in this generic service guide. In such cases, contact your regional offices or the responsible personnel/channel to provide you with further technical details.

When ordering FRU parts: Check the most up-to-date information available on your regional Web or channel. If, for whatever reason, a part number change is made, it may not be noted in this printed service guide.

Acer-authorized Service Providers: Your Acer office may have a different part number code than those given in the FRU list in this service guide. You must use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

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Hardware Specifications and Configurations

Features

The following is a summary of the computer's many features:

Operating System

- Genuine Windows® 7 Ultimate 64-bit
- Genuine Windows® 7 Home Premium 64-bit

Platform

- Intel® Core™ i7-2820QM processor (8 MB L3 cache, 2.30 GHz with Turbo Boost up to 3.40 GHz, DDR3 1600 MHz, 45 W),
- i7-2630QM/i7-2720QM processor (6 MB L3 cache, 2/2.20 GHz with Turbo Boost up to 2.90/3.30 GHz, DDR3 1600 MHz, 45 W), supporting Intel® 64 architecture, Intel® Smart Cache
- Mobile Intel® HM65 Express Chipset

System Memory

- Dual-channel DDR3 SDRAM support
  - Up to 4 GB of DDR3 system memory, upgradable to 16 GB using four soDIMM modules

Display

- 18.4" Full HD 1920 x 1080 resolution, high-brightness (220-nit) Acer CineCrystal™ LED-backlit TFT LCD
- Mercury-free, environment-friendly
- Frameless design
- 16:9 aspect ratio

Storage Subsystem

Hard disk drive

- One or two 160/250/320/500/640/750 GB or larger

Multi-in-1 card reader, supporting

- Secure Digital™ (SD), MultiMediaCard™ (MMC), Memory Stick™ (MS), Memory Stick PRO™ (MS PRO), xD-Picture Card™ (xD)

Audio Subsystem

- Optimized Dolby® Home Theater® v47 audio enhancement, featuring Audio Optimizer, Audio Regulator, Volume Leveler, Volume Maximizer, Intelligent EQ, Dialogue Enhancer, Surround Virtualizer for Headphones, Surround Virtualizer for Built-in Speakers, and Dolby® Digital Output technologies
- Acer CineSurround with five built-in speakers and the Acer Tuba CineBass subwoofer supporting low-frequency effects
- True 5.1-channel surround sound output
- High-definition audio support
- S/PDIF (Sony/Philips Digital Interface) support for digital speakers
- MS-Sound compatible
- Built-in digital microphone

Graphics

- Dual independent display support
- 16.7 million colors
- External resolution / refresh rates:
  - VGA port up to 2048 x 1536: 85 Hz
  - HDMI® port up to 1920 x 1080: 60 Hz
- MPEG-2/DVD decoding
- VC-1 and H.264 (AVC) decoding
- Microsoft® DirectX® Video Acceleration (DXVA) application interface (API)
- HDMI® (High-Definition Multimedia Interface) with HDCP (High-bandwidth Digital Content Protection) support

AMD Radeon™ HD 6850M

- AMD Radeon™ HD 6850M with 2048 MB of dedicated DDR3 VRAM, supporting Unified Video Decoder 2 (UVD 2), OpenEXR High Dynamic-Range (HDR) technology, Shader Model 5.0, Microsoft® DirectX® 11, OpenGL® 3.1, OpenCL™ 1.1

AMD Radeon™ HD 6650M

- AMD Radeon™ HD 6650M with 1024 MB of dedicated DDR3 VRAM, supporting Unified Video Decoder 3 (UVD 3), OpenEXR High Dynamic-Range (HDR) technology, Shader Model 5.0, Microsoft® DirectX® 11, OpenGL® 3.1, OpenCL™ 1.1
- MPEG-4 Part 2 DivX® and Xvid decoding

Privacy Control

- Acer Bio-Protection fingerprint solution, featuring Pre-Boot Authentication (PBA), computer protection, Acer FingerLaunch
- BIOS user, supervisor, HDD passwords
- Kensington lock slot

Optical Media Drive

- 4X Blu-ray Disc™ writer / DVD-Super Multi double-layer drive:
  - Read: 24X CD-ROM, 24X CD-R, 24X CD-RW, 8X DVD-ROM, 8X DVD-R, 8X DVD+R, 6X DVD-ROM DL, 6X DVD-R DL, 6X DVD+R DL, 8X DVD-RW, 8X DVD+RW, 5X DVD-RAM, 4X BD-ROM, 4X BD-R, 4X BD-RE, 4X BD-ROM DL, 4X BD-R DL
  - Write: 24X CD-R, 10X CD-RW, 8X DVD-R, 8X DVD+R, 6X DVD-RW, 6X DVD+RW, 5X DVD-RAM, 4X DVD+R DL, 4X DVD-R DL, 4X BD-R, 2X BD-RE, 4X BD-R DL
- 4X Blu-ray Disc™ / DVD-Super Multi double-layer drive:
  - Read: 24X CD-ROM, 24X CD-R, 16X CD-RW, 8X DVD-ROM, 8X DVD-R, 8X DVD+R, 4X DVD-ROM DL, 4X DVD-R DL, 4X DVD+R DL, 4X DVD-RW, 4X DVD+RW, 5X DVD-RAM, 4X BD-ROM, 4X BD-R, 4X BD-RE, 4X BD-ROM DL, 4X BD-R DL, 4X BD-RE DL
  - Write: 16X CD-R, 10X CD-RW, 8X DVD-R, 8X DVD+R, 4X DVD-RW, 4X DVD+RW, 5X DVD-RAM, 4X DVD+R DL, 4X DVD-R DL
- 8X DVD-Super Multi double-layer drive:
  - Read: 24X CD-ROM, 24X CD-R, 24X CD-RW, 8X DVD-ROM, 8X DVD-R, 8X DVD+R, 6X DVD-ROM DL, 4X DVD-R DL, 4X DVD+R DL, 6X DVD-RW, 6X DVD+RW, 5X DVD-RAM
  - Write: 24X CD-R, 16X CD-RW, 8X DVD-R, 8X DVD+R, 4X DVD-R DL, 4X DVD+R DL, 6X DVD-RW, 8X DVD+RW, 5X DVD-RAM

Communication

Webcam

- Acer Video Conference, featuring:
  - Acer Crystal Eye webcam with 1280 x 1024 resolution
  - Acer Video Conference Manager software, featuring Video Quality Enhancement (VQE) technology, supporting 640 x 480 resolution online video calls

WLAN

- Acer InviLink™ Nplify™ 802.11b/g/n Wi-Fi CERTIFIED™
- Acer InviLink™ Nplify™ 802.11b/g Wi-Fi CERTIFIED™
- Supporting Acer SignalUp™ wireless technology

WPAN

- Bluetooth® 3.0+HS

LAN

- Gigabit Ethernet, Wake-on-LAN ready

Dimension and Weight

Dimensions

- 440 (W) x 295 (D) x 29.5/39.4 (H) mm (17.34 x 11.62 x 1.16/1.55 inches)

Weight

- 4.6 kg (10.1 lbs.)13 with 8-cell battery

Power Adapter and Battery

- ACPI 3.0 CPU power management standard: supports Standby and Hibernation power-saving modes

Power adapter

- 3-pin 120 W AC adapter:
  - 155 (W) x 67 (D) x 36.5 (H) mm (6.1 x 2.63 x 1.43 inches)
  - 570 g (1.25 lbs.)13 with 180 cm DC cable

Battery

- 83 Wh 6000 mAh 8-cell Li-ion standard battery pack
- Battery life: 3 hours16
- ENERGY STAR®

I/O Ports

- Multi-in-1 card reader (SD™, MMC, MS, MS PRO, xD)
- Three USB 2.0 ports16
- USB 3.0 port
- IEEE 1394 port
- eSATA / USB 2.0 port
- HDMI® port with HDCP support
- Consumer infrared (CIR) port
- External display (VGA) port
- Headphone/speaker/line-out jack with S/PDIF support
- Microphone-in jack
- Line-in jack
- Ethernet (RJ-45) port
- DC-in jack for AC adapter

Special Keys and Controls

Keyboard

- 103-/104-/107-key back-mounted keyboard with independent standard numeric keypad, international language support

Touchpad

- Dual-mode touchpad with Media Console / multi-gesture function, supporting two-finger scroll, pinch, rotate, flip

Media keys

- Touch-sensitive Media Console, featuring:
  - Movie, music shortcuts
  - Media controls: play/pause, stop, previous, next
  - Horizontal volume wheel

Control keys

- Instant-on Acer Arcade™ Deluxe support
- Acer PowerSmart or programmable key
- Acer Backup key
- Communication key
- Acer Bio-Protection fingerprint reader

Environment

Temperature

- Operating: 5 °C to 35 °C
- Non-operating: -20 °C to 65 °C

Humidity (non-condensing)

- Operating: 20% to 80%
- Non-operating: 20% to 80%

Warranty

- One-year International Travelers Warranty (ITW)

Optional Items

- Acer Xpress VoIP phone and Acer Video Conference Manager pack
- Acer Media Center remote control
- 1 GB / 2 GB / 4 GB DDR3 1066 MHz soDIMM module
- 160/250/320/500/640/750 GB hard disk drive
- 8-cell Li-ion battery pack
- 3-pin 120 W AC adapter
- External USB floppy disk drive
- External USB modem

Software

Productivity

- Acer Backup Manager
- Acer ePower Management
- Acer eRecovery Management
- Adobe® Flash® Player 10.1
- Adobe® Reader® 9.1
- eSobi™
- Bing™ Bar
- Microsoft® Office 2010 preloaded (purchase a product key to activate)
- Microsoft® Office Starter 2010
- Norton™ Online Backup
- Barnes & Noble Desktop Reader (US only)
- NY Times Reader (US only)

Security

- Acer Bio-Protection
- McAfee® Internet Security Suite Trial
- MyWinLocker®1 (except China, Hong Kong)

Multimedia

- Acer Arcade™ Deluxe
- Acer InstantOn Arcade
- NTI Media Maker™

Gaming

- Oberon GameZone (except US, Canada, Hong Kong, Korea)
- WildTangent® (US, Canada only)

Communication and ISP

- Acer Crystal Eye
- Acer Video Conference Manager
- Microsoft® Silverlight™
- Skype™
- Windows Live™ Essentials

Web links and utilities

- Acer Accessory Store (Belgium, France, Germany, Italy, Netherlands, Spain, Sweden, UK only)
- Acer Identity Card
- Acer Registration
- Acer Updater
- eBay® shortcut 2009 (Canada, France, Germany, Italy, Mexico, Spain, UK, US only)
- Netflix shortcut (US only)

Notebook Tour

Top View

Figure 1-1. Top View

Table 1-1. Top View

#	Icon	Item	Description
1		Acer Crystal Eye webcam	Web camera for video communication. (only for certain models)
2		Display screen	Also called Liquid-Crystal Display (LCD), displays computer output (configuration may vary by model).

Table 1-1. Top View (Continued)

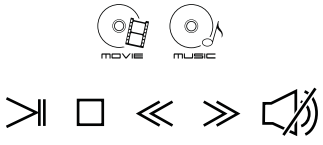
#	Icon	Item	Description
3		Arcade key	Launches InstantOn Arcade.
	P	P key / Acer PowerSmart key	Programmable key (configuration may vary by model). / Puts your computer into power-saving mode (configuration may vary by model).
4		Keyboard	For entering data into your computer
5		Microphone	Internal microphone for recording sound.
6		Touchpad / Media Console	Touch-sensitive pointing device which functions like a computer mouse*. Touch sensitive controls for Acer Arcade, volume (up/down) and media (play/pause, stop, previous, next); with mute. * Touchpad becomes inactive when Media Console is active.
7		Media Console controller	Turns Media Console on or off.
8		Communication key	Enables/disables the computer's communication devices. (Communication devices may vary by configuration.)
		Backup key	Launches Acer Backup Management for three-step data backup.
		HDD indicator	Indicates when the hard disk drive is active.
		Power indicator	Indicates the computer's power status.
9		Click buttons (left and right)	The left and right buttons function like the left and right mouse buttons.
10		Palm rest	Comfortable support area for your hand when using the computer.
11		Acer Bio-Protection fingerprint reader	Supports Acer FingerNav 4-way control function (only for certain models).
12		Speakers	Left and right speakers deliver stereo audio output.

Table 1-1. Top View (Continued)

#	Icon	Item	Description
13		Power button / Battery indicator	Turns the computer on and off. Indicates the computer's battery status. ● **Charging:** The light shows amber when the battery is charging. ● **Fully charged:** The light shows blue when in AC mode.
⇛ **NOTE:** The front panel indicators are visible even when the computer cover is closed up.			

Media Console

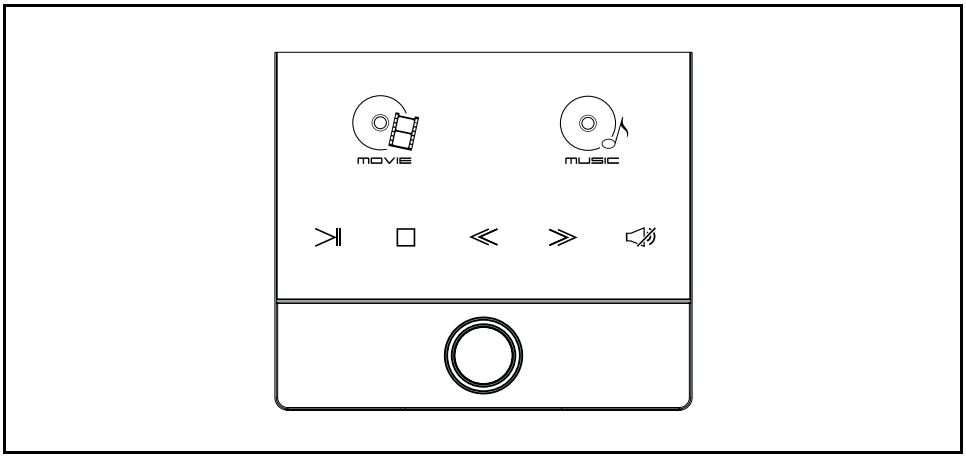


Figure 1-2. Media Console

Media Console is a touch-sensitive entertainment interface including instant access to Acer Arcade. Press the Media Console controller to activate Media Console. Press again to turn it off and activate the touchpad.

Table 1-2. Media Console

Icon	Item	Description
	Movie	Launch movie playback software.
	Music	Launch music playback software.
	Play/pause	Play or pause a selected media file.
	Stop	Stop playing the selected media file.
	Previous	Return to the previous media file.
	Next	Jump to the next media file.
	Mute	Turn the volume on or off.

Closed Front View

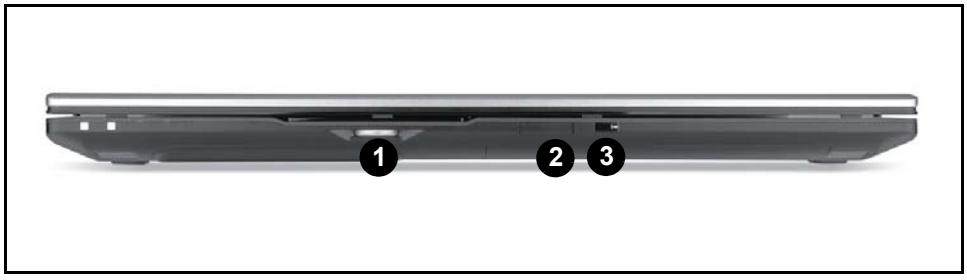


Figure 1-3. Closed Front View

Table 1-3. Closed Front View

#	Icon	Item	Description
1		Thumbwheel	Turn the volume up or down.
2	MULTIMEDIACARD SD xD PRO	Multi-in-1 card reader	Accepts Secure Digital (SD), MultiMediaCard (MMC), Memory Stick (MS), Memory Stick PRO (MS PRO), xD-Picture Card (xD). **NOTE:** Push to remove/install the card. Only one card can operate at any given time.
3		CIR receiver	Receives signals from a remote control.

Rear View

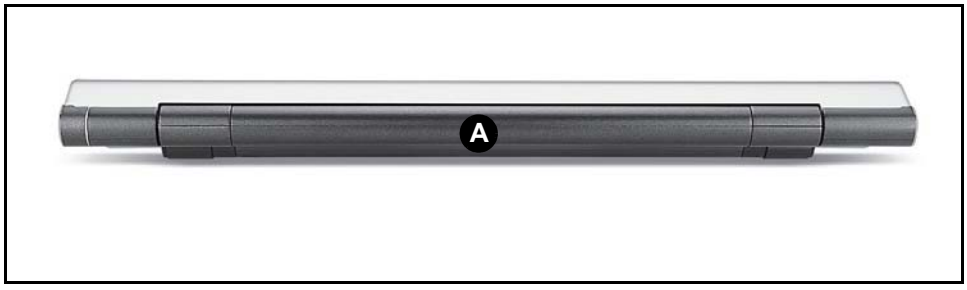


Figure 1-4. Rear View

Table 1-4. Rear View

#	Icon	Item	Description
1		Battery bay	Houses the computer's battery pack.

Left View

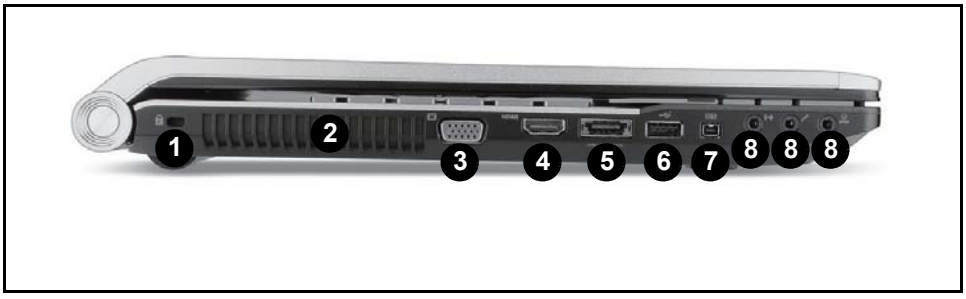


Figure 1-5. Left View

Table 1-5. Left View

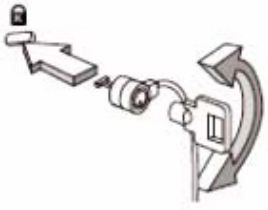
#	Icon	Item	Description
1		Kensington lock slot 	Connects to a Kensington-compatible computer security lock. **NOTE:** Wrap the computer security lock cable around an immovable object such as a table or handle of a locked drawer. Insert the lock into the notch and turn the key to secure the lock. Some keyless models are also available.
2		Ventilation slots	Enable the computer to stay cool, even after prolonged use.
3		External display (VGA) port	Connects to a display device (e.g. external monitor, LCD projector).
4	HDMI	HDMI port	Supports high definition digital video connections.
5	/e SATA	USB 2.0 / eSATA port	Connects to USB 2.0 or eSATA devices (only for certain models).
6		USB 3.0 port	Connects to USB devices. Supports the USB 3.0 (SuperSpeed USB) specification. * Devices without USB 3.0 certification may not be compatible.
7	1394	4-pin IEEE 1394 port	Connects to IEEE 1394 devices.

Table 1-5. Left View (Continued)

#	Icon	Item	Description
8		Line-in jack	Accepts audio line-in devices (e.g., audio CD player, stereo walkman, mp3 player)
		Microphone-in jack	Accepts inputs from external microphones.
		Headphones / speaker / line-out jack with S/PDIF support.	Connects to audio line-out devices (e.g., speakers, headphones).

Right View

Figure 1-6. Right View

Table 1-6. Right View

#	Icon	Item	Description
1		USB 2.0 ports	Connects to USB 2.0 devices (e.g., USB mouse, USB camera).
2		Optical drive	Internal optical drive; accepts CDs, DVDs, or Blu-ray Discs (for certain models only).
3		Optical disk access indicator	Lights up when the optical drive is active.
4		Optical drive eject button	Ejects the optical disk from the drive.
5		Emergency eject hole	Ejects the optical drive tray when the computer is turned off. **NOTE:** Insert a paper clip to the emergency eject hole to eject the optical drive tray when the computer is off.
6		Ethernet (RJ-45) port	Connects to an Ethernet 10/100/1000-based network.
7		DC-in jack	Connects to an AC adapter.

Base View

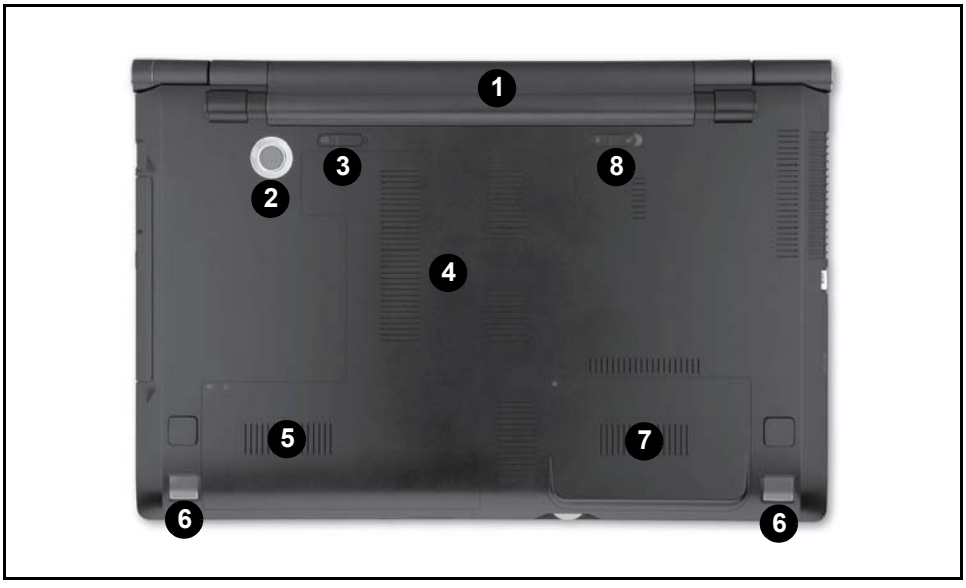


Figure 1-7. Base View

Table 1-7. Base View

#	Icon	Item	Description
1		Battery bay	Houses the computer's battery pack.
2		Subwoofer	Emits low frequency sound output.
3		Battery release latch	Releases the battery for removal.
4		Memory compartment	Houses the computer's main memory.
5		Hard disk bay- Main	Houses the computer's hard disk (secured with screws)
6		Speakers	Deliver stereo audio output.
7		Hard disk bay- Secondary	Houses the computer's hard disk (secured with screws) (for certain models only)
8		Battery lock	Locks the battery in position

Touchpad Basics

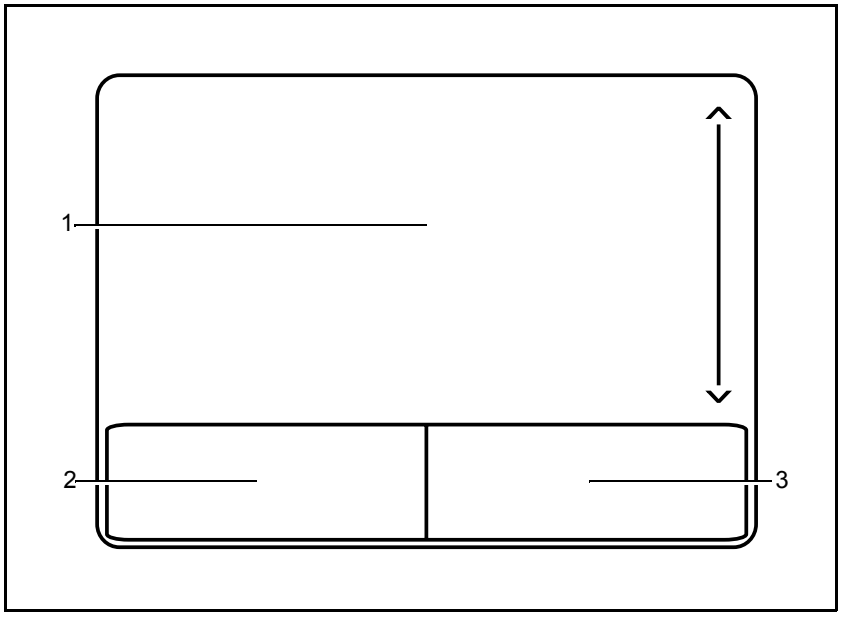


Figure 1-8. Touchpad

- Move your finger across the Touchpad (1) to move the cursor.
- Press the left (2) and right (3) buttons located beneath the Touchpad to perform selection and execution functions. These two buttons are the equivalent of the left and right buttons on a mouse. Tapping on the Touchpad is the same as clicking the left button.

Table 1-8. Touchpad

Function	Main TouchPad (1)	Left Button (2)	Right Button (3)
Execute	Tap twice (at the same speed as double-clicking a mouse button).	Quickly click twice.	
Select	Tap once.	Click once.	
Drag	Tap twice (at the same speed as double-clicking a mouse button); rest your finger on the TouchPad on the second tap and drag the cursor.	Click and hold, then use finger on the Touchpad to drag the cursor.	
Access context menu			Click once.

NOTE: When using the TouchPad, keep it - and fingers - dry and clean. The TouchPad is sensitive to finger movement; hence, the lighter the touch, the better the response. Tapping too hard will not increase the TouchPad's responsiveness.

Using the Keyboard

The computer has a close-to-full-sized keyboard and an embedded numeric keypad, separate cursor, lock, function and special keys.

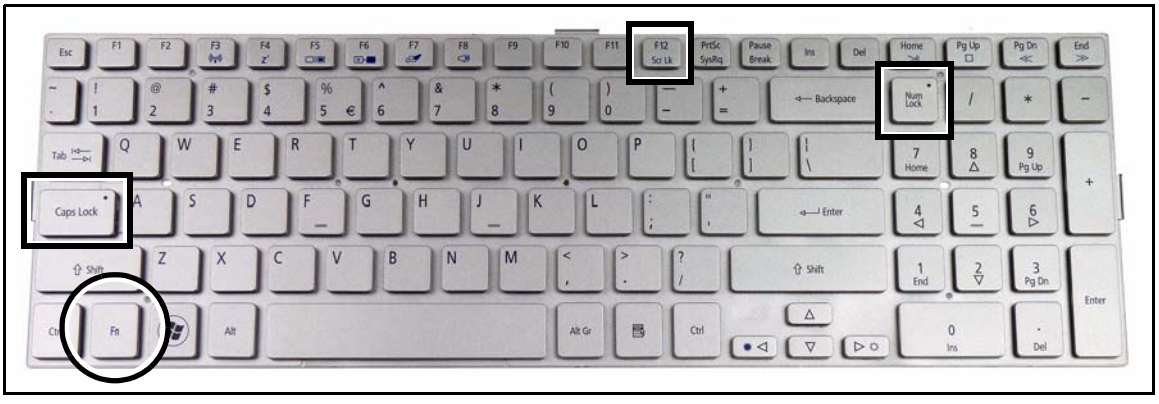


Figure 1-9. Keyboard Lock Keys

Lock Keys

The keyboard has three lock keys which can be toggled on and off.

Table 1-9. Keyboard Lock Keys

Lock key	Description
Caps Lock	When Caps Lock is on, all alphabetic characters typed are in uppercase.
Num Lock	When Num Lock is on, the embedded keypad is in numeric mode. The keys function as a calculator (complete with the arithmetic operators +, -, *, and /). Use this mode when doing a lot of numeric data entry. A better solution would be to connect an external keypad.
Scroll Lock <Fn> + <F12>	When Scroll Lock is on, the screen moves one line up or down when the up or down arrow keys are pressed respectively. Scroll Lock does not work with some applications.

Embedded Numeric Keypad

The embedded numeric keypad functions like a desktop numeric keypad. It is indicated by small characters located on the upper right corner of the key caps. To simplify the keyboard legend, cursor-control key symbols are not printed on the keys.

Desired access	Num Lock on	Num Lock off
Number keys on embedded keypad	Type numbers in a normal manner.	
Cursor-control keys on embedded keypad	Hold <Shift> while using cursor-control keys.	Hold <Fn> while using cursor-control keys.
Main keyboard keys	Hold <Fn> while typing letters on embedded keypad.	Type the letters in a normal manner.

Windows Keys

The keyboard has two keys that perform Windows-specific functions.

- Windows Logo key
- Application key

Table 1-10. Windows Keys

Key	Description
Windows Logo key	Pressed alone, this key has the same effect as clicking on the Windows Start button; it launches the Start menu. It can also be used with other keys to provide a variety of functions. **Functions supported by Windows XP, Windows Vista, and Windows 7:** <(⊞)>: Open or close the Start menu <(⊞)> + <R>: Open the Run dialog box <(⊞)> + <M>: Minimizes all windows <SHIFT> + <(⊞)> + M: Undo minimize all windows <(⊞)> + <F1>: Show the help window <(⊞)> + <E>: Open Windows Explorer <(⊞)> + <F>: Search for a file or folder <(⊞)> + <D>: Show the desktop <CTRL> + <(⊞)> + <F>: Search for computers (if you are on a network) <(⊞)> + <L>: Lock your computer (if you are connected to a network domain), or switch users (if you're not connected to a network domain) <CTRL> + <(⊞)> + <TAB>: Moves focus from Start menu, to the Quick Launch toolbar, to the system tray (use RIGHT ARROW or LEFT ARROW to move focus to items on the Quick Launch toolbar and the system tray) <(⊞)> + <TAB>: Cycle through programs on the taskbar <(⊞)> + <BREAK>: Display the System Properties dialog box **Functions supported by Windows XP:** <(⊞)> + <BREAK>: Show the System Properties dialog box <(⊞)> + <U>: Open Ease of Access Center
Application key	This key has the same effect as clicking the right mouse button; it opens the application's context menu.

Hot Keys

The computer employs hot keys or key combinations to access most of the computer's controls like screen brightness and volume output.

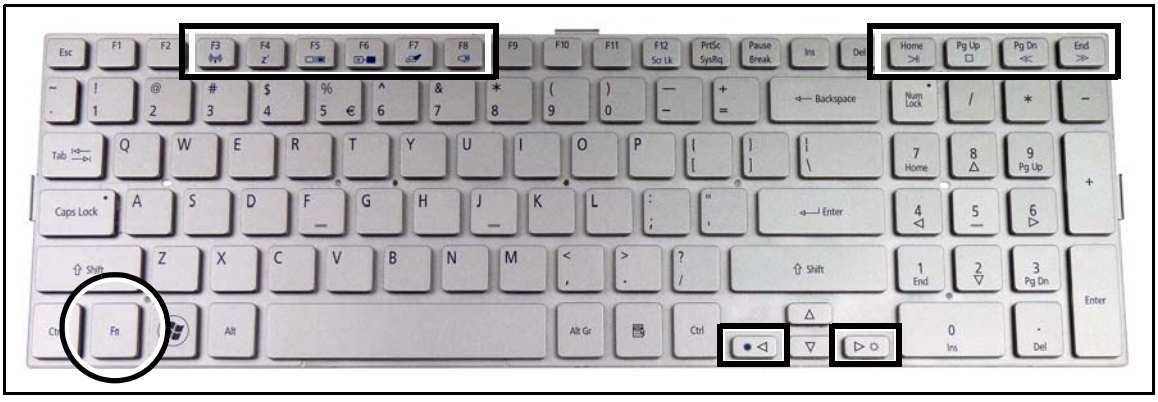


Figure 1-10. Keyboard Hot Keys

To activate hot keys, press and hold the <Fn> key before pressing the other key in the hockey combination.

Table 1-11. Keyboard Hot Keys

Hot key	Icon	Function	Description
<Fn> + <F3>		Communication switch	Enables/disables the computer's communication devices. (Communication devices may vary by configuration.)
<Fn> + <F4>		Sleep	Puts the computer in Sleep mode.
<Fn> + <F5>		Display toggle	Switches display output between the display screen, external monitor (if connected) and both.
<Fn> + <F6>		Screen blank	Turns the display screen backlight off to save power. Press any key to return.
<Fn> + <F7>		Touchpad toggle	Turns the touchpad on and off.
<Fn> + <F8>		Speaker toggle	Turns the speakers on and off.
<Fn> + <▷>		Brightness up	Increases the screen brightness.
<Fn> + <◁ >		Brightness down	Decreases the screen brightness.

Table 1-11. Keyboard Hot Keys (Continued)

Hot key	Icon	Function	Description
<Fn> + <Home>		Play/Pause	Plays or pauses media files
<Fn> + <Pg Up>		Stop	Stops media file
<Fn> + <Pg Dn>		Previous	Plays the previous media file in the play sequence
<Fn> + <End>		Next	Plays the next media file in the play sequence

System Block Diagram

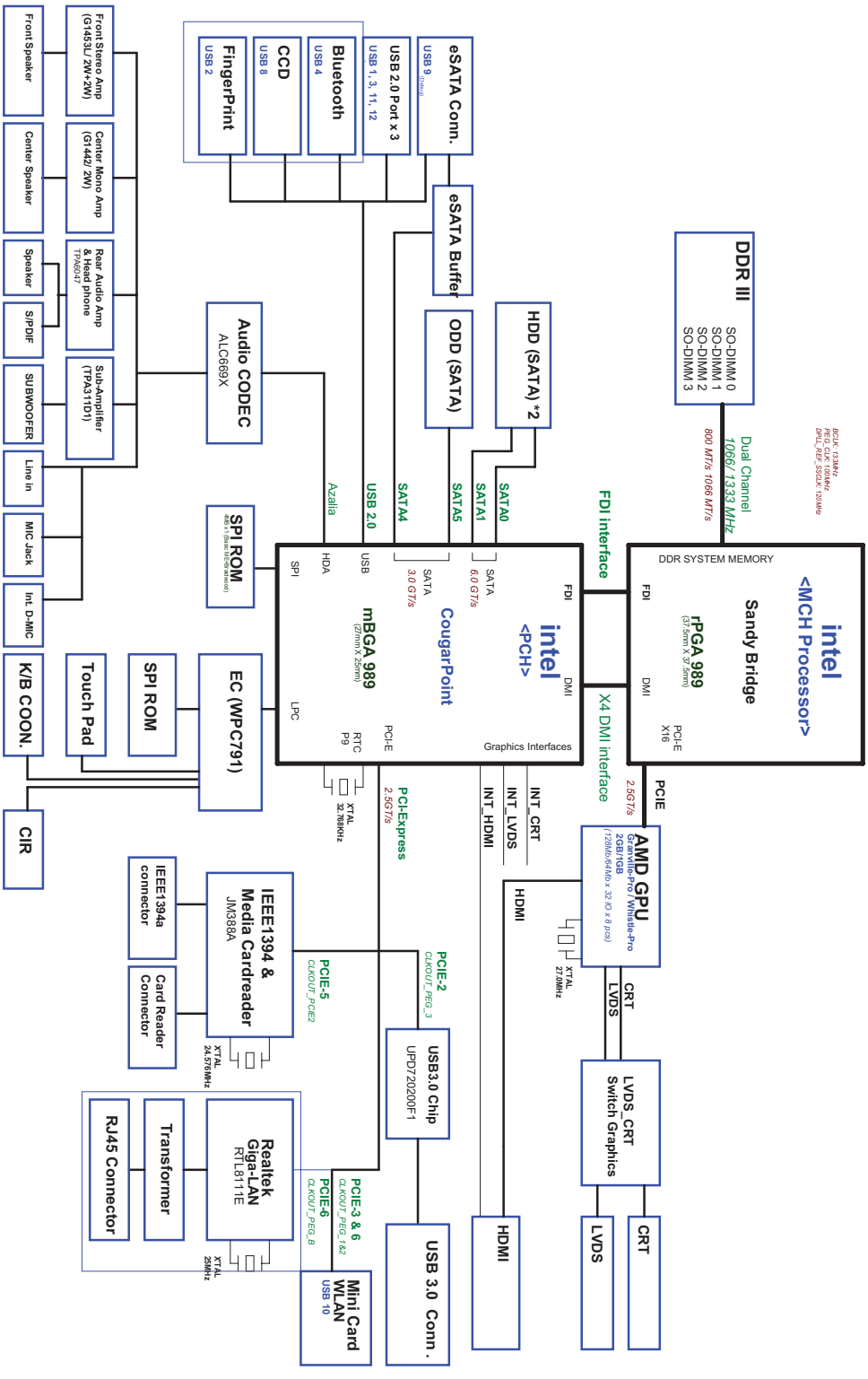


Figure 1-11. System Block Diagram

Specification Tables

Computer specifications

Item	Metric	Imperial
Dimensions		
Length	295mm	11.6”
Width	440mm	17.3”
Height (front to rear)	39.4mm	1.6”
Weight (equipped with optical drive, flash drive, and battery)	Glass SKU 3.9kg / Non-glass SKU 3.6kg	Glass SKU 8.6lbs / Non-glass SKU 7.9lbs
Input power		
Operating voltage	19V	19V
Operating current	6.23A	6.23A
Temperature		
Operating (not writing to optical disc)	0°C~35°C	32°F to 95°F
Operating (writing to optical disc)	5°C to 35°C	41°F to 95°F
Nonoperating	20°C to 65°C	-4°F to -149°F
Relative humidity		
Operating	20% to 80%	
Nonoperating	20% to 80%	
Maximum altitude (unpressurized)		
Operating	-15m to 3,048m	-50 ft. to 10,000 ft.
Nonoperating	-15m to 12, 192m	-50 ft. to 40,000 ft.
Shock		
Operating	30G/X,Y axis; 40G/Z axis; 3ms; half-sine	30G/X,Y axis; 40G/Z axis; 3ms; half-sine
Nonoperating	30G/X,Y axis; 40G/Z axis; 3ms; half-sine	30G/X,Y axis; 40G/Z axis; 3ms; half-sine
Random vibration		
Operating	0.6G/5~500 HZ/30 min per axis	
Nonoperating	1.5G/5~500HZ/30 min per axis	

NOTE:
Applicable product safety standards specify thermal limits for plastic surfaces. The computer operates well within this range of temperatures.

System Board Major Chips

Item	Specification
Core logic	Intel Ibex-Peak HM65
VGA	**Internal:** Integrated Graphics Controller **External:** ATI Granville-pro/Wistler-pro
LAN	Realtek RTL8111EA-VB-GR
USB 2.0	Integrated with PCH
USB 3.0	NEC UPD720200AF1-DAP-A
Super I/O controller	Nuvoton NPCE791C
Bluetooth U	SB
Wireless At	heros HB97
PCMCIA N/	A
Audio codec	Realtek ALC669X-GR
Card reader	JMB388-QGAZ0A
eSata	TIC SN75LVCP412A

Processor

Item	Specification
CPU type	Intel Sandy bridge QC (i7 -7/8/9) processors MCP (Multi-Chip Package) CPU
CPU package	989 pins-rPGA socket
Core Logic	Four-core processor ● 32-KB instruction and 32 -KB data first-level cache (L1) for each core ● 256-KB shared instruction/data second -level cache (L2) for each core ● Up to 8-MB shared instruction/data last -level cache (L3), shared among all cores
Chipset	HM65

Processor Specifications

Item	CPU Speed (GHz)	Cores/ Threads	Bus Speed (FSB/ DMI/QBI)	Mfg Tech (nm)	Cache Size	Package	Voltage
i7-2620M	2.7	4	DMI/QPI	32 nm	4 MB	LGA-1155	35W
i7-2630QM	2.0	4	DMI/QPI	32 nm	6 MB	LGA-1155	35W
i7-2720QM	2.2	4	DMI/QPI	32 nm	6 MB	LGA-1155	35W
i7-2820QM	2.3	4	DMI/QPI	32 nm	8 MB	LGA-1155	35W

CPU Fan True Value Table (TJ100-CPU)

CPU Temperature (°C)	Fan Speed (RPM)	SPL Spec (dBA)
45	2850	31
56	3150	34
70	3450	37
83	3800	40
96	5v	5v
Throttling 50%: On = 97°C; Off = 90°C OS & HW Shutdown: 100°C		

System Memory

Item	Specification
Memory controller	Built in CPU
Memory size	1GB, 2GB, & 4GB
DIMM socket number	4
Supports memory size per socket	4GB
Supports maximum memory size	16GB
Supports DIMM type	DDR3
Supports DIMM Speed	800/1066/1333 MHz
Support DIMM voltage	1.5V ± 0.075V
Supports DIMM package	204-pin SODIMM

Memory Combinations

Slot 1 (MB)	Slot 2 (MB)	Slot 3(MB)	Slot 4(MB)	Total Memory (MB)
0	0	0	1024	1024
0	0	1024	0	1024
0	1024	0	0	1024
1024	0	0	0	1024
0	0	1024	1024	2048
0	1024	1024	0	2048
1024	1024	0	0	2048
1024	0	0	1024	2048
0	1024	1024	1024	3072
1024	1024	1024	0	3072
1024	1024	0	1024	3072
1024	0	1024	1024	3072
1024	1024	1024	1024	4096
0	0	0	2048	2048
0	0	2048	0	2048
0	2048	0	0	2048
2048	0	0	0	2048
0	0	2048	2048	4096
0	2048	2048	0	4096
2048	2048	0	0	4096
2048	0	0	2048	4096
0	2048	2048	2048	6144
2048	2048	2048	0	6144
2048	2048	0	2048	6144
2048	0	2048	2048	6144
2048	2048	2048	2048	8192
0	0	0	4096	4096
0	0	4096	0	4096
0	4096	0	0	4096
4096	0	0	0	4096
0	0	4096	4096	8192
0	4096	4096	0	8192

Slot 1 (MB)	Slot 2 (MB)	Slot 3(MB)	Slot 4(MB)	Total Memory (MB)
4096	4096	0	0	8192
4096	0	0	4096	8192
0	4096	4096	4096	12288
4096	4096	4096	0	12288
4096	4096	0	4096	12288
4096	0	4096	4096	12288
4096	4096	4096	4096	16384

Video Interface

Item	Specification
Chipset	ATI Granville-pro/Wistler-pro
Package	962-pins FCBGA 29mm x 29mm
Interface	PCI-E x16
Compatibility	Granville supports Microsoft® DirectX 11 with Shader Model 5.0, PCI Express® Revision 2.0, VESA DisplayPort™ technologies, and integrated HDMI™. The Unified Video Decoder 2.0 (UVD 2) enables support for dual-stream decode of High Definition (HD) and Standard Definition (SD) content (H.264, VC-1, or MPEG-2 formats). In addition, Granville supports 7.1 channels of compressed HD Audio with Digital Rights Management (DRM).
Sampling rate	Maximum pixel frequency of 400 MHz.

BIOS

Item	Specification	
BIOS vendor	Insyde	
BIOS Version	V1.01	
BIOS ROM type	W25X16AVSSIG	W25Q32BVSSIG
BIOS ROM size	512KB	4MB
Features	SPI interface	

LAN Interface

Item	Specification
LAN Chipset	Realtek RTL8111EA-VB-GR
LAN connector type	RJ45
LAN connector location	Right side
Features	● Integrated 10/100/1000base-T transceiver ● Automatic MDI crossover function ● PCIe v1.1 compliant ● 10/100/1000BASE-T full-duplex/half-duplex MAC ● Receive side scaling (RSS) for multicore processors ● Complies with IEEE802.3, 802.3u, 802.3ab and 802.1p ● Supports iSCSI boot ● IPv4 and IPv6 large send offload and checksum offload (LSO/TCO) ● Wake on LAN(WOL) support meeting the ACPI requirements ● Statistics for SNMP MIB II, Ethernet-like MIB and Ethernet MIB(IEEE 802.3z, Clause 30) ● SMBus interface supporting Alert Standard Format (ASF) v2.0 ● Self-boot feature, utilizing smaller EEPROM size with ability to use on-chip memory ● Serial Flash memory support with auto-sensing capability ● PCI Express CLKREQ# support ● Integrated switching regulator for improved power consumption

Keyboard

Item	Specification
Type	Acer AF7P_A10S AF7P
Total number of keypads	US/UK 129 keys, JP 132 keys
Windows logo key	Yes
Internal & external keyboard work simultaneously	Plug USB keyboard to the USB port directly: Yes
Features	● Support Application keys for Windows Vista / Windows 7 ● Multi-Langue support

Hard Disk Drive (AVL components)

Item	Specification		
Vendor & Model Name	Hitachi HTS545012B9A300, HTS545012B9SA00	Western Digital WD1600BPVT, WD1600BEVT, Hitachi HTS545016B9A300, HTS545016B9SA00, HTS543216A7A384, Toshiba MK1665GSX, Seagate ST9160316AS	Western Digital WD2500BPVT-22A23T0, WD2500BEVT-22A23T0, Hitachi HTS545025B9A300, HTS545025B9SA00, HTS543225A7A384 Toshiba MK2565GSX, Seagate ST9250315AS, HGST AB545025015
Capacity (GB)	120	160	250
Bytes per sector	512	4096, 512, 512, 512, 512, 512, 512	4096, 512, 512, 512, 512, 512, 512, 512
Data heads	1	1, 1, 2, 2, 1/2, 1, 1	2, 2, 2, 2, 2, 2, 2, 2
Drive Format			
Disks	1	1, 1, 1, 1, 1, 1, 1	1, 1, 1, 1, 1, 1, 1, 1
Spindle speed (RPM)	5400		
Performance Specifications			
Buffer size	8MB		
Interface	SATA		
Fast data transfer rate (Mbits / sec, max)	3.0		
Media data transfer rate (Mbytes/sec max)	875	108, 106, 845, 845, 994.875, (464 -1148MBits/s), 1175	108, 106, 845, 875, 953, (464 -1148Mbits/s), 1175, 1031.7
DC Power Requirements			
Voltage tolerance	5V ±5%		

Item	Specification	
Vendor & Model Name	Western Digital WD3200BPVT-22A23T0, WD3200BEVT-22A23T0, Hitachi HTS545032B9A300, HTS545032B9SA00, HTS543232A7A384 Toshiba MK3265GSX, Seagate ST9320315AS, ST9320312AS, ST9320310AS, HGST AB545032018	Western Digital WD5000BPVT, WD5000BEVT-22A0RT, Hitachi HTS545050B9A300, HTS545050B9SA00 Toshiba MK5065GSX, Seagate ST9500325AS, ST9400321AS
Capacity (GB)	320	500
Bytes per sector	4096, 512, 512, 4096, 512, 512, 512, 512	512, 512, 512, 512, 512, 512, 4096
Data heads	2, 1, 3, 4, 2, 1, 2, 2, 3	3, 4, 4, 4, 4, 4, 4
Drive Format		
Disks	1, 1, 2, 2, 1, 1, 1, 1, 2	2, 4, 2, 2, 2, 2, 2
Spindle speed (RPM)	5400	
Performance Specifications		
Buffer size	8MB	
Interface	SATA	
Fast data transfer rate (Mbits / sec, max)	3.0	
Media data transfer rate (Mbytes/sec max)	108, 106, 875, 875, (464 -1148Mbits/s), 1175, 1175, 1175, 1273.3	106, 845, 875, 875, 1031.7, 1175, 1175
DC Power Requirements		
Voltage tolerance	5V ±5%	

Item	Specification		
Vendor & Model Name	Western Digital WD6400BPVT, Toshiba MK6465GSX, Seagate ST9640322AS, ST9640320AS	Western Digital WD7500BPVT, Toshiba MK7559GSXP	
Capacity (GB)	640	750	
Bytes per sector	512, 512, 4096, 512	512, 512	
Data heads	4, 4, 4, 4	4, 4	
Drive Format			
Disks	2, 2, 2, 2	2, 2	
Spindle speed (RPM)	5400		
Performance Specifications			
Buffer size	8MB		
Interface	SATA		
Fast data transfer rate (Mbits / sec, max)	3.0		
Media data transfer rate (Mbytes/sec max)	97, (464 -1148 Mbits/s), 1175, 1175,	97, (584.3-1195.5 Mbits/s)	
DC Power Requirements			
Voltage tolerance	5V ±5%		

Super-Multi Drive

Item	Specification			
Vendor & Model name	HLDS GT32N		HLDS GT34N	
Performance Specification	With CD Diskette	With DVD Diskette	With CD Diskette	With DVD Diskette
Transfer rate (KB/sec)	Sustained: Max 3.6 (24x)	Sustained: Max 11.08 (8x)	Sustained: Max 3.6 (24x)	Sustained: Max 11.08 (8x)
Buffer Memory	1 MB			
Interface SA	TA			
Applicable disc format	DVD: DVD-ROM: 4.7GB (Single Layer) 8.5GB (Dual Layer) DVD-R: 3.95GB (Ver. 1.0: read only) 4.7GB (Ver. 2.0 for Authoring: read only) 4.7GB (Ver. 2.1 for General: read & write) (DL) 8.5GB (Ver. 3.0) DVD-RW: 4.7GB (Ver. 1.2/ Rev 1.0, 2.0, 3.0) DVD-RAM: 4.7GB/side (Ver. 2.2) DVD+R: 4.7GB (Ver. 1.3) (DL) 8.5GB (Ver. 1.1) DVD+RW: 4.7GB (Vol.1 Ver.1.3) CD: CD-ROM Mode-1 data disc CD-ROM Mode-2 data disc CD-ROM XA, CD-I, Photo-CD Multi-Session, Video CD CD-Audio Disc Mixed mode CD-ROM disc (data and audio) CD-Extra CD-Text CD-R (Conforming to “Orange Book Part 2”: read & write) CD-RW (Conforming to “Orange Book Part 3”: read & write)			
Loading mechanism	Electrical Release (Release Button) Release by ATAPI command Emergency Release			
Power Requirements				
Input Voltage	5 V +/- 5% (Operating)			

Item	Specification			
Vendor & Model name	Panasonic UJ8A0		Panasonic UJ890	
Performance Specification	With CD Diskette	With DVD Diskette	With CD Diskette	With DVD Diskette
Transfer rate (KB/sec)	Sustained: Max 3.6 (24x)	Sustained: Max 10.8 (8x)	Sustained: Max 3.6 (24x)	Sustained: Max 10.8 (8x)
Buffer Memory	1 MB			
Interface SA	TA			
Applicable disc format	DVD: DVD-VIDEO, DVD-ROM, DVD-R(4.7GB), DVD-R DL DVD-RW(Ver.1.1/1.2) DVD+R, DVD+R DL, DVD+RW DVD-RAM(4.7GB) CD: CD-DA, CD-ROM, CD-ROM XA, PhotoCD (multisession), Video CD, Cd-Extract (CD+), CD-text			
Loading mechanism	Electrical Release (Release Button) Release by ATAPI command Emergency Release			
Power Requirements				
Input Voltage	DC 5V +/- 0.25V			

Item	Specification			
Vendor & Model name	Pioneer BDC-TD03RS		Pioneer DVR-TD10RS	
Performance Specification	With CD Diskette	With DVD Diskette	With CD Diskette	With DVD Diskette
Transfer rate (KB/sec)	Sustained: - CD-ROM inside 1.545 - CD-ROM outside 3.6	Sustained: - DVD inside 4.455 - DVD outside 10.8 - DVD-RAM inside 4.155 - DVD-RAM outside 6.925	Sustained: - CD-ROM inside 1.5 - CD-ROM outside 3.6	Sustained: - DVD-R inside 2.7 - DVD-R outside 10.8 - DVD+R inside 3.24 - DVD+R outside 10.8
Buffer Memory	4 MB		1.5 MB	
Interface SA	TA			
Applicable disc format	BD-RE Ver2.1 (Read only) BD-R Ver1.1 & 1.2 & 1.3 (Read only) BD-ROM (with copy protection) and BD9 KODAK Photo CD Single and Multi-session CD Extra (CD PLUS) Video CD CD text data (Read/Write) CD-R discs (Read/Write) CD-RW discs (Read/Write) DVD-R Ver.2.0 & 2.1 for General (Read/Write) DVD-R DL Ver.3.0 (Read/Write) DVD-RW Ver.1.0 & 1.1 & 1.2 (Read/Write) DVD+R Ver.1.3 (Read/Write) DVD+R DL Ver1.0 & 1.1 (Read/Write) DVD+RW Ver.1.3 & high speed Ver.1.0 (Read/Write) DVD-RAM Ver.2.0 & 2.1 & 2.2 (Read/Write: RAM2 Read only)		KODAK PhotoCD Single and Multi-session CD Extra (CDPLUS) Video CD CD text data (Read/Write) CD-R discs (Read/Write) CD-RW discs (Read/Write) DVD-ROM DVD-R Ver.2.0 &2.1 for General (Read/Write) DVD-R DL Ver.3.0 (Read/Write) DVD-RW Ver.1.0&1.1&1.2 (Read/Write) DVD+R Ver.1.3 (Read/Write) DVD+R DL Ver1.0&1.1 (Read/Write) DVD+RW Ver.1.3 (Read/Write) DVD+RW high speed Ver.1.0 (Read/Write) DVD-RAM Ver.2.0&2.1&2.2 (*1)	
Loading mechanism	Electrical Release (Release Button) Release by ATAPI command Emergency Release			
Power Requirements				
Input Voltage	5V +/- 5% (Operating)			

Item	Specification			
Vendor & Model name	Panasonic UJ8A0		Panasonic UJ890	
Performance Specification	With CD Diskette	With DVD Diskette	With CD Diskette	With DVD Diskette
Transfer rate (KB/sec)	Sustained: Max 3.6 (24x)	Sustained: Max 10.8 (8x)	Sustained: Max 3.6 (24x)	Sustained: Max 10.8 (8x)
Buffer Memory	1 MB			
Interface SA	TA			
Applicable disc format	DVD: DVD-VIDEO, DVD-ROM, DVD-R(4.7GB), DVD-R DL DVD-RW(Ver.1.1/1.2) DVD+R, DVD+R DL, DVD+RW DVD-RAM(4.7GB) CD: CD-DA, CD-ROM, CD-ROM XA, PhotoCD (multisession), Video CD, Cd-Extra (CD+), CD-text			
Loading mechanism	Electrical Release (Release Button) Release by ATAPI command Emergency Release			
Power Requirements				
Input Voltage	DC 5V +/- 0.25V			

Item	Specification			
Vendor & Model name	PLDS DS-8A5SH			
Performance Specification	With CD Diskette	With DVD Diskette		
Transfer rate (KB/sec)	Sustained: - CD-ROM inside 1.45 - CD-ROM outside 3.5	Sustained: - DVD-ROM inside 3.7 - DVD-ROM outside 10		
Buffer Memory	1.5 MB			
Interface SA	TA			
Applicable disc format	DVD: DVD-ROM (4.7G/8.54G) single layer on single/double side (Read Only), DVD-ROM dual layer (PTP/OTP) on single/double side (Read Only), DVD-RW, DVD+RW, DVD-R (4.7G for General), DVD+R, DVD+R9, DVD-R9, DVD-RAM(4.7G) CD: CD-ROM, CD-R and CD-RW			
Loading mechanism	Manual load Plunger system			
Power Requirements				
Input Voltage				

BD Drive

Items	Specifications		
Vendor & Model name	Panasonic UJ141AL		
Performance Specification	With CD Diskette	With DVD Diskette	With BD Diskette
Transfer rate (KB/sec)	Sustained: Max 36 (24x)	Sustained: Max 10800 (8x)	Sustained: Max 27000 (1.6x CLV, 2x CLV, 4x, 6x CAV)
Buffer Memory	2 MB		
Interface SA	TA		
Applicable disc format	DVD: DVD-VIDEO, DVD-ROM, DVD-R(4.7GB), DVD-RW(Ver.1.1/1.2), DVD-RAM, DVD+R, DVD+R DL, DVD+RW, DVD-R DL(Format1/4) CD: CD-DA, CD-ROM, CD-ROM XA, PhotoCD (multisession), VideoCD, CD-Extra (CD+), CD-text, Hybrid SACD BD: BD-ROM (1.0), BD-R (1.0), BD-RE (2.0)		
Loading mechanism	Electrical Release (Release Button) Release by ATAPI command Emergency Release		
Power Requirement			
Input Voltage	DC 5V +/- 0.25V		

Items	Specifications		
Vendor & Model name	Panasonic UJ240		
Performance Specification	With CD Diskette	With DVD Diskette	With BD Diskette
Transfer rate (KB/sec)	Sustained: Max 3600 (24x)	Sustained: Max 10800 (8x)	Sustained: Max 27000 (1.6x CLV, 2x CLV, 4x, 6x CAV)
Buffer Memory	2 MB		
Interface SA	TA		
Applicable disc format	DVD: DVD-VIDEO, DVD-ROM, DVD-R(4.7GB), DVD-RW(Ver.1.1/1.2), DVD-RAM, DVD+R, DVD+R DL, DVD+RW, DVD-R DL(Format1/4) CD: CD-DA, CD-ROM, CD-ROM XA, PhotoCD (multisession), VideoCD, CD-Extra (CD+), CD-text, Hybrid SACD BD: BD-ROM(1.0), BD-R(1.0), BD-RE(2.0)		
Loading mechanism	Electrical Release (Release Button) Release by ATAPI command Emergency Release		
Power Requirement			
Input Voltage	DC 5V +/- 0.25V		

Items	Specifications		
Vendor & Model name	PLDS DS-4E1S		
Performance Specification	With CD Diskette	With DVD Diskette	With BD Diskette
Transfer rate (KB/sec)	Sustained: - CD-ROM inside 1450 - CD-ROM outside 3500	Sustained: - DVD-ROM inside 4300 - DVD-ROM outside 10000	Sustained: - BD-ROM SL inside 7500 - BD-ROM SL outside 18000
Buffer Memory	2 MB		
Interface	SATA		
Applicable disc format	DVD: DVD-ROM (4.7G/8.54G) single layer on single/double side (Read Only), DVD-ROM dual layer (PTP/OTP) on single/double side (Read Only), DVD-R (3.9G, 4.7G for General and Authoring), DVD-RW, DVD+RW (4.7G), DVD+R, DVD+R DL, DVD-R DL, DVD-RAM CD: CD-ROM, CD-R and CD-RW BD: BD-ROM, BD-ROM DL, BD-R, BD-R DL, BD-RE, BD-RE DL, BD-hybrid (only BD part)		
Loading mechanism	Manual load/ Plunger system		
Power Requirement			
Input Voltage	5V +/- 5%		

LED 18.4”

Item	Specification
Vendor & Model name	CHI MEI N184H6-L02
Screen Diagonal (mm)	469.13 (18.47”)
Active Area (mm)	408.6 (H) x 234.24 (V) 16.09” (H) x 9.22“(V)
Display resolution (pixels)	1920 x R.G.B x 1080
Pixel Pitch (mm)	0.213 (H) x 0.213 (V)
Typical White Luminance (cd/m^2) also called Brightness	220
Contrast Ratio	650:1 (typical) 500:1 (min)
Response Time (Optical Rise Time/Fall Time) msec	2 (typical), 8 (max) / 6 (typical), 12 (max)
Typical Power Consumption (watt)	4.6
Weight (without inverter)	620 (typical) 635 (max)
Physical Size (mm)	422 x 247.5 x (min) 422.5 x 248 x 6 (typical) 423 x 248.5 x 6.3 (max)
Electrical Interface	40 pins LVDS
Viewing Angle (degree) Horizontal (Right) CR = 10 (Left) Vertical (Upper) CR = 10 (Lower)	45 / 45 / 20 / 45 (typical) 40 / 40 / 15 / 40 (min)

LCD Inverter (not available with this model)

Item	Specification
Vendor & Model name	
Brightness conditions	
Input voltage (v)	
Input current (mA)	
Output voltage (V, RMS)	
Output current (mA, RMS)	
Output voltage frequency (KHz)	

Display Supported Resolution (LCD Supported Resolution)

Resolution	16 bits	30 bits	36 bit	48 bit
640x480p/60Hz 4:3	Yes	Yes	Yes	Yes
720x480p/60Hz 4:3	Yes	Yes	Yes	Yes
720x480p/60Hz 16:9	Yes	Yes	Yes	Yes
1280x720p/60Hz 16:9	Yes	Yes	Yes	Yes
1920x1080i/60Hz 16:9	Yes	Yes	Yes	Yes
1440x480i/60Hz 4:3	Yes	Yes	Yes	Yes
1440x480i/60Hz 16:9	Yes	Yes	Yes	Yes
1920x1080p/60Hz 16:9	Yes	Yes	Yes	Yes
720x576p/50Hz 4:3	Yes	Yes	Yes	Yes
720x576p/50Hz 16:9	Yes	Yes	Yes	Yes
1280x720p/50Hz 16:9	Yes	Yes	Yes	Yes
1920x1080i/50Hz 16:9	Yes	Yes	Yes	Yes
1440x576i/50Hz 4:3	Yes	Yes	Yes	Yes
1440x576i/50Hz 16:9	Yes	Yes	Yes	Yes
1920x1080p/50Hz 16:9	Yes	Yes	Yes	Yes

Graphics Controller

Item	Specification	
VGA Chip	AMD Radeon™ HD 6850M	AMD Radeon™ HD 6650M
Supports	● Unified Video Decoder 2 (UVD 2) ● OpenEXR High Dynamic-Range (HDR) technology ● Shader Model 5.0 ● Microsoft® DirectX® 11 ● OpenGL® 3.1 ● OpenCL™ 1.1	● Unified Video Decoder 3 (UVD 3) ● OpenEXR High Dynamic-Range (HDR) technology ● Shader Model 5.0 ● Microsoft® DirectX® 11 ● OpenGL® 3.1 ● OpenCL™ 1.1

Display Supported Resolution (GPU Supported Resolution)

Resolution	16 bits	32 bits	Intel	ATI
800x600p/60Hz 16:9	Yes	Yes	Yes	Yes
1024x768p/60Hz 16:9	Yes	Yes	Yes	Yes
1280x600/60Hz 16:9	Yes	Yes	Yes	
1280x720/60Hz 16:9	Yes	Yes	Yes	Yes
1280x768/60Hz 16:9	Yes	Yes	Yes	Yes
1360x768/60Hz 16:9	Yes	Yes	Yes	Yes
1366x768/60Hz 16:9	Yes	Yes	Yes	Yes

Bluetooth Interface

Item	Specifications	
Chipset	Atheros AR3011	Broadcom BCM2070
Data throughput	TX 1.2Mbits/sec RX 1.2Mbits/sec	TX 1.2Mbits/sec RX 1.2Mbits/sec
Protocol	3.0+HS	3.0+HS
Interface	USB 2.0	USB 2.0
Connector type	JST SM08B SURS - TF	JST SM06B-XSRK-ETB
Supported protocol	2.1, 3.0	2.1, 3.0

Bluetooth Module

Item	Specifications
Controller	AR3011
Feature	● Single-chip Bluetooth v2.1/3.0 + EDR integrated solution ● USB 2.0 full-speed device interface with support for Device Firmware Upgrade (DFU) ● SPI interface supports external serial flash devices ● Two on-chip 1.2V linear voltage regulators ● Integrated 32-bit CPU with 32KB data RAM and 256KB program RAM ● On-board PLL ● On-chip low power oscillator (LPO) ● WLAN coexistence interface ● Standard USB HCI interface
Controller	BCM2070
Features	● Bluetooth 2.1 compliant ● Point-to-multipoint operation ● External USB interface for data ● Onboard antenna and SMA RF connector ● Coexistence support

Camera

Item	Specification		
Vendor & Model	Chicony 1.3 MB CH9665SN (CNF9155)	Suyin 1.3MB SY9665SN	Liteon 1.3MB LT9665AL (09P2SF119)
Type	CMOS image sensor with SXGA	CMOS image sensor with SXGA	CMOS image sensor with SXGA

Mini Card

Item	Specification
Number supported	2
TV tuner	DVB-T/ATSC: Not supported DVB-T Half Minicard: Not supported
Features	Not available

3G Card (not available in this model)

Item	Specification
Features	

Audio Codec and Amplifier

Item	Specification
Audio Controller	Realtek ALC669X-GR
Features	● High performance DACs with digital >110dB and analog 98dB (A-weighting) signal-to noise] ● High performance ADCs with digital > 100dB and analog 90dB (A-Weighting) signal-to noise ratio ● Six DAC channels support 16/20/24-bit PCM format for 5.1 sound playback ● Two stereo ADCs support 16/20/24-bit PCM format, multiple stereo recording ● All DACs supports 44.1k/48k/96k/192kHz sample rate ● All ADCs supports 44.1k/48k/96k/192kHz sample rate ● Primary 16/20/24-bit SPDIF-OUT supports 32k/44.1k/48k/88.2k/96k/192kHz sample rate ● Secondary 16/20/24-bit SPDIF-OUT supports 32k/44.1k/48k/88.2k/96k/192kHz sample rate ● Analog jacks (port-A, B, C, E and G) support stereo input and output re-tasking
	● Port-B/C/E/F with software selectable boost gain (+10/+20/+30dB) for analog microphone input ● Supports external PCBEEP input and built-in digital BEEP generator ● Software selectable 2.5V/3.2V VREFOUT ● Supports legacy analog mixer architecture ● Four channels of digital microphone array input for voice applications ● Two jack detection pins each designed to detect up to 4 jacks plugging ● 1.0dB/step playback volume control ● 1.5dB/step recording volume control ● High pass filter to cancel DC offset from AD converter ● Jack detection function is supported when device is in power down mode (D3) ● 2 GPIOs (General Purpose Input and Output) for customized applications. GPIO0 and ● GPIO1 share ● pin with digital microphone ● Supports anti-pop mode when analog power AVDD is on and digital power is off.

Item	Specification
	● Support MONO output at port-H ● Port-A/D/E/F built in headphone amplifiers ● Port-E and Port-F headphone amplifiers can drive earphone directly without DC blocking capacitor ● Audio Content Protection for Blu-Ray DVD playback (with selected player provided by InterVideo, CyberLink and ArcSoft) ● Intel low power ECR compliant and power status control for every analog converter and pin widgets ● Supports 3.3V digital core power, 1.5V-3.3V scalable digital I/O power for HD Audio link, and 3.0-5.0V analog power
Amplifier	TPA311D1
Features	Mono x1, front x1, surround x1, subwoofer x1

Audio Interface

Item	Specification
Audio Controller	Realtek ALC669X-GR
Audio onboard or optional	Onboard
Mono or Stereo	Stereo
Compatibility	Microsoft WLP (Windows Logo Program)
Sampling rate	44.1k/48k/96k/192kHz
Internal microphone	Yes
Internal speaker/quantity	Yes / 6 1. Left Back (2W) 2. Right Back (2W) 3. Center Back (2W) 4. Subwoofer Back Bottom Panel (3W) 5. Surround Left Front (2W) 6. Surround Right Front (2W)

Wireless Module 802.11b/g/n

Item	Specification	
Chipset	Atheros HB97	BCM943225HM
Data throughput	11-54 Mbps, up to 300 Mbps for Draft-N	11-54 Mbps, up to 300 Mbps for Draft-N
Protocol	b, g, n	b, g, n
Interface	PCI-E	PCI-E

Battery

Item	Specification
Vendor & Model name	SIMPLO AS10C
Battery Type	Li-Ion
Pack capacity	6000mAh
Number of battery cell	8
Package configuration	4S2P

VRAM

Item	Specification
Chipset	AMD GPU Whistle-Pro / Granville-Pro
Memory size	1GB / 2GB
Interface	PCI-E

USB Port

Item	Specification	
USB compliance level	Universal Serial Bus 2.0	Universal Serial Bus 3.0 specification Revision 1.0
Protocol	EHCI, UHCI	xHCI
Number of USB port(s)	3	1
Location	Right side	Left side
Output Current	1.05V	3.3V and 1.05V

HDMI Port

Item	Specification
Compliance level	HDMI 1.4a
Data throughput	5.4 Gbps
Number of HDMI port(s)	1
Location	Right side

AC Adapter

Item	Specification
Input rating	120W
Maximum input AC current	1.8A Max at 120W
Inrush current	I^2t at 264V
Efficiency	More than 87% of average efficiency of 25%, 50%, 75% and 100% load tested at 115Vac and 230Vac.

System Power Management

Item	Specification
Mech. Off (G3)	Al devices in the system are turned off completely.
Soft Off (G2/S5)	OS initiated shutdown. All devices in the system are turned off completely.
Working (G0/S0)	Individual devices such as the CPU and hard disc may be power managed in this state.
Suspend to RAM (S3)	CPU set power down VGA Suspend PCMCIA Suspend Audio Power Down Hard Disk Power Down CD-ROM Power Down Super I/O Low Power mode
Save to Disk (S4)	Also called Hibernation Mode. System saves all system states and data onto the disc prior to power off the whole system.

Card Reader

Item	Specification
Chipset	JMicron JMB388-QGAZ0A
Package	QFN
Maximum supported size	SD: up to 2 GB SDHC: up to 32 GB SDXC: up to 2TB mini SD: as SD/SDHC micro SD: as SD/SDHC XD: up to 2GB Memory Stick: up to 128MB Memory Stick Duo: up to 128MB Memory Stick Pro/Duo/HG: up to 32GB Memory Stick XC (MSXC): up to 2TB MMC: up to 2TB

Item	Specification
Features	● Compliant with PCI Express Base Spec. Revision 1.1 ● Compliant with 1394 Open Host Controller Interface (OHCI) Release 1.1 ● Compliant with SD Spec. Part 1 Physical Layer Spec. Version 3.00 ● Compliant with SD Spec. Part A2 SD Host Controller Standard Spec. Version 2.00 ● Compliant with SD Spec. Part E1 SDIO Spec. Version 2.00 ● Compliant with SD Spec. Part 2 File System Spec. Version 3.00 ● Compliant with MultiMediaCard System Spec. Version 4.2 ● Compliant with Memory Stick Standard Format Spec. Version 1.43-00 ● Compliant with Memory Stick Standard Memory Stick PRO Format Spec. - without security spec. - Version 1.02-00 ● Compliant with Memory Stick Pro-HG Duo Spec. Version 1.00 ● Compliant with Memory Stick XC Duo Format Specification ver.1.00-00 ● Compliant with Memory Stick XC-HG Duo Format Specification ver.1.00-00 ● Compliant with Memory Stick XC Micro Format Specification ver.1.00-00 ● Compliant with Memory Stick XC-HG Micro Format Specification ver.1.00-00 ● Compliant with xD-Picture CardTM Card Spec. Version 1.20 ● Compliant with xD-Picture CardTM Host Guideline Version 1.20 ● Compliant with xD-Picture CardTM Host Compliance Design Check Spec. Version 1.20D ● Compliant with xD-Picture CardTM Format Spec. Version 1.11 ● Compliant with System Management Bus Specification Revision 1.1

System LED Indicator

Item	Specification
Lock	● Caps Lock on = Blue ● Caps Lock on = Blue
System state	● Blue color on: System on ● Blue color and amber color off: System off ● Amber color on: S3
HDD access state	HDD access active = Blue
Wireless state	Wifi on = Amber
Power button backlight	● Blue color solid on: System on ● Blue color off: System off
Battery state	● Full charging = Blue ● Battery charging = Amber
Back up state	Back up active = Blue
Arcade module state	Arcade module active = Blue
Finger print module state	Finger print module active = Blue

System DMA Specification

Legacy Mode	Power Management
DMA0	Not applicable
DMA1*	Not applicable
DMA2*	Not applicable
DMA3	Not applicable
DMA4	Direct memory access controller
DMA5*	Not applicable
DMA6	Not assigned
DMA7	Not assigned
*ExpressCard controller can use DMA 1, 2, or 5.	

System Interrupt Specification

Hardware IRQ	System Function
IRQ0 Sy	stem timer
IRQ1 S	tandard PS/2 Keyboard
IRQ2*	Not in use
IRQ3*	Not in use
IRQ4	Nuvoton CIR Transceiver
IRQ5*	Not in use
IRQ6*	Not in use
IRQ7*	Not in use
IRQ8	System CMOS/real-time clock
IRQ9*	Not in use
IRQ10*	Not in use
IRQ11*	Not in use
IRQ12	Synaptics PS/2 Port Touchpad
IRQ13	Numeric data processor
IRQ14*	Not in use
IRQ15*	Not in use
* Reserved for PCI device used	

System IO Address Map

I/O address (hex)	System Function (shipping configuration)
000 - 01F	Direct memory access controller
020 - 021	Programmable interrupt controller
024 - 025	Programmable interrupt controller
028 - 029	Programmable interrupt controller
02C - 02D	Programmable interrupt controller
02E - 02F	Motherboard resources
030 - 031	Programmable interrupt controller
034 - 035	Programmable interrupt controller
038 - 039	Programmable interrupt controller
03C - 03D	Programmable interrupt controller
040 - 043	System timer
04E - 04F	Motherboard resources
050 - 053	System timer
060	Standard PS/2 Keyboard
061	Motherboard resources
062	Microsoft ACPI-Compliant Embedded Controller
063 Mo	therboard resources
064	Standard PS/2 Keyboard
065	Motherboard resources
066	Microsoft ACPI-Compliant Embedded Controller
067	Motherboard resources
068	Motherboard resources
06C	Motherboard resources
070	Motherboard resources
070 - 077	System CMOS/real time clock
080	Motherboard resources
081 - 091	Direct memory access controller
092	Motherboard resources
093 - 09F	Direct memory access controller
0A0 - 0A1	Programmable interrupt controller
0A4 - 0A5	Programmable interrupt controller
0A8 - 0A9	Programmable interrupt controller

I/O address (hex)	System Function (shipping configuration)
System IO Address Map (Continued)	
0AC - 0AD	Programmable interrupt controller
0B0 - 0B1	Programmable interrupt controller
0B2 - 0B3	Motherboard resources
0B4 - 0B5	Programmable interrupt controller
0B8 - 0B9	Programmable interrupt controller
0BC - 0BD	Programmable interrupt controller
0C0 - 0DF	Direct memory access controller
0F0	Numeric data processor
3B0 - 3BB	AMD Radeon HD 68X0M
3C0 - 3DF	AMD Radeon HD 68X0M
3C0 - 3DF	PCI standard PCI-to-PCI bridge
400 -47F	Motherboard resources
454 - 457	Motherboard resources
4D0 - 4D1	Programmable interrupt controller
500 - 57F	Motherboard resources
680 - 69F	Motherboard resources
610-617	Nuvoton CIR Transceiver
620-63F	Nuvoton CIR Transceiver
800-80F	Motherboard resources
CF8-CFF	Motherboard resources
164E-164F	Motherboard resources
2000-2FFF	Car reader controller
3000-3FFF	USB 3.0 controller
4000-4FFF	Realtek PCIe GBE Family Controller
5000-5FFF	AMD Radeon HD 68X0M
6000-601F	SMbus Controller
6020-603F	SATA AHCI controller
6040-6047	SATA AHCI controller
6048-604F	SATA AHCI controller
6058-605B	SATA AHCI controller
605C-605F	SATA AHCI controller
E000-EFFF	WLAN controller

CHAPTER 2

System Utilities

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System Utilities

BIOS Setup Utility

This utility is a hardware configuration program built into a computer's BIOS (Basic Input/Output System).

The utility is pre-configured and optimized so most users do not need to run it. If configuration problems occur, the setup utility may need to be run. Refer to *Chapter 4, Troubleshooting* when a problem arises.

To activate the utility, press ***F2*** during POST (power-on self-test) when prompted at the bottom of screen.

The default parameter of `F12 Boot Menu` is set to `Disabled`. To change the boot device without entering *BIOS Setup Utility*, set the parameter to `Enabled`.

To change the boot device without entering the BIOS SETUP, press ***F12*** during POST to enter the multi-boot menu.

Navigating the BIOS Utility

Six menu options are:

- Information
- Main
- Security
- Boot
- Exit

To navigate through the following:

- Menu - use the left and right arrow keys
- Item - use the up and down arrow keys
- Change parameter value - press ***F5*** or ***F6***.
- Exit - Press ***Esc***
- Load default settings - press ***F9***. Press ***F10*** to save changes and exit BIOS Setup Utility

NOTE:

Parameter values can be changed if enclosed in square brackets [ ]. Navigation keys appear at the bottom of the screen. Read parameter help carefully when making changes to parameter values. Parameter help is found in the Item Specific Help area of the screen.

NOTE:

System information is subject to specific models.

BIOS

The following is a description of the tabs found on the InsydeH20 *BIOS Setup Utility* screen:

NOTE:
The screens provided are for reference only. Actual values may differ by model.

Information

This tab shows a summary of computer hardware information.

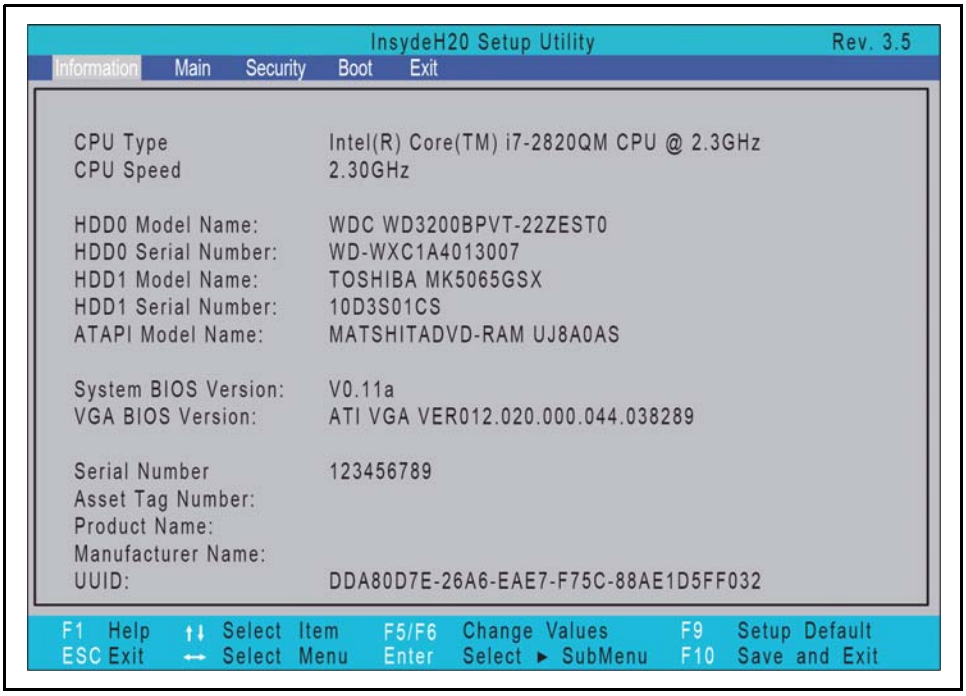

Figure 2-1. BIOS Information

Table 2-1 describes the parameters shown in Figure 2-1

Table 2-1. BIOS Information

Parameter	Description
CPU Type	CPU (central processing unit) type and speed of system
CPU Speed	Speed of the CPU
HDD0 Model Name	Model name of HDD0 (hard disk drive) installed on primary IDE master
HDD0 Serial Number	Serial number of HDD0 installed on primary IDE master
HDD1 Model Name	Model name of HDD1 installed on primary IDE master
HDD1 Serial Number	Serial number of HDD1 installed on primary IDE master

Table 2-1. BIOS Information (Continued)

Parameter	Description
ATAPI Model Name	Model name of Optical device installed in system
System BIOS Version	System BIOS version
VGA BIOS Version	VGA (video graphics array) firmware version of system
Serial Number	Serial number of unit
Asset Tag Number	Asset tag number of system
Product Name	Product name of the system
Manufacturer Name	Manufacturer of system
UUID	Universally Unique Identifier

Main

This tab allows the user to set system time and date, enable or disable boot option and enable or disable recovery.

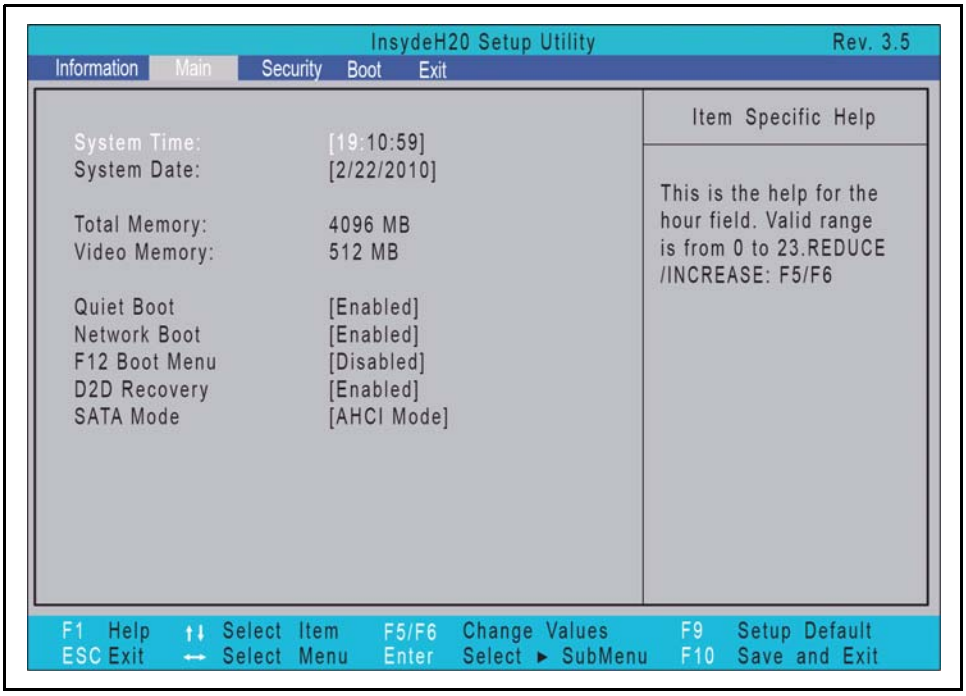

Figure 2-2. BIOS Main

Table 2-2 describes the parameters shown in Figure 2-2

.

Table 2-2. BIOS Main

Parameter	Description	Format/Option
System Time	BIOS system time in 24-hour format	Format: HH:MM:SS (hour:minute:second)
System Date	BIOS system date	Format MM/DD/YYYY (month/day/year)
Total Memory	Total memory available	N/A
Video Memory	Available memory for video	N/A
Quiet Boot	Shows OEM (original equipment manufacturer) screen during system boot instead of traditional POST screen	Option: Enabled or Disabled
Network Boot	Option to boot system from LAN (local area network)	Option: Enabled or Disabled

Table 2-2. BIOS Main (Continued)

Parameter	Description	Format/Option
F12 Boot Menu	Option to use boot menu during POST	Option: Enabled or Disabled
D2D Recovery	Option to use D2D Recovery function	Option: Enabled or Disabled
SATA Mode	Option to set SATA controller mode	Option: AHCI or IDE

Security

This tab shows parameters that safeguard and protect the computer from unauthorized use.

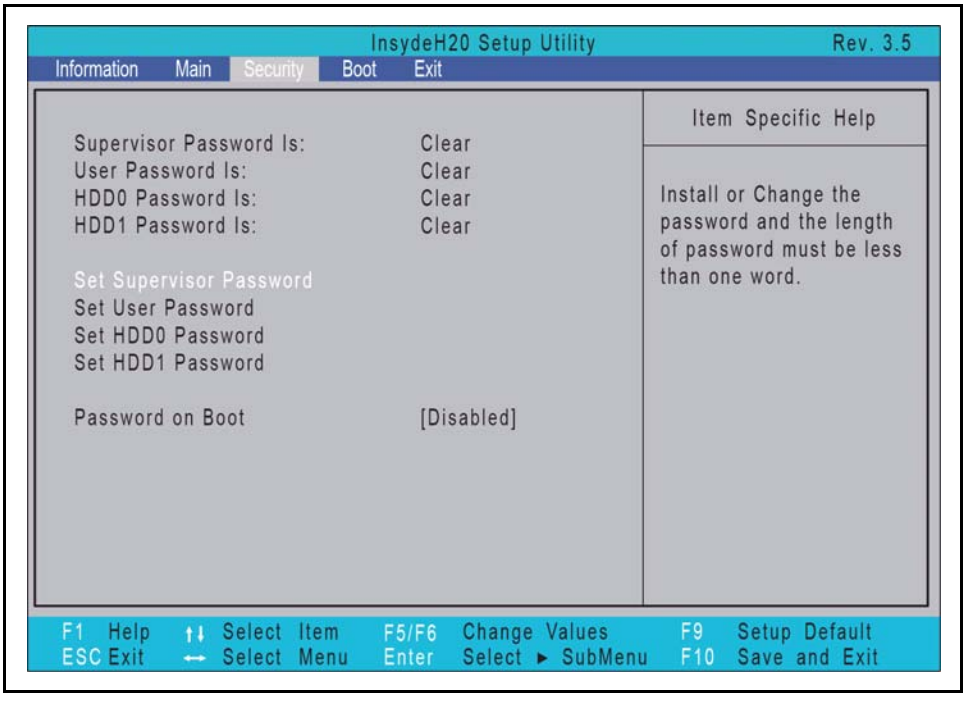
InsydeH20 Setup Utility
Rev. 3.5
Information
Main
Security
Boot
Exit
Item Specific Help
Supervisor Password Is: Clear
User Password Is: Clear
HDD0 Password Is: Clear
HDD1 Password Is: Clear
Set Supervisor Password
Set User Password
Set HDD0 Password
Set HDD1 Password
Password on Boot [Disabled]
Install or Change the password and the length of password must be less than one word.
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Default
ESC Exit ↔ Select Menu Enter Select ▸ SubMenu F10 Save and Exit

Figure 2-3. BIOS Security

Table 2-3 describes the parameters shown in Figure 2-3.

Table 2-3. BIOS Security

Parameter	Description	Option
Supervisor Password Is	Supervisor password setting	Clear or Set
User Password Is	User password setting	Clear or Set
HDD0 Password Is	HDD0 password setting	Clear or Set
HDD1 Password Is	HDD1 password setting	Clear or Set
SATA Port0 Disk Status	SATA Port0 Disk Status setting	Clear or Set
Set Supervisor Password	Option to set supervisor password	N/A
Set User Password	Option to set user password	N/A
Set HDD0 Password	Option to set HDD0 password	N/A
Set HDD1 Password	Option to set HDD1 password	N/A
Password on Boot	Shows if password is required during system boot	Disabled or Enabled

⇒ NOTE:

When prompted to enter password, three attempts are allowed before system halts. Resetting BIOS password may require computer be returned to dealer.

Setting a Password

Perform the following to set user or supervisor passwords:

1. Use the ↑ and ↓ keys to highlight the `Set Supervisor Password` parameter and press ***Enter***. The `Set Supervisor Password` dialog box appears.

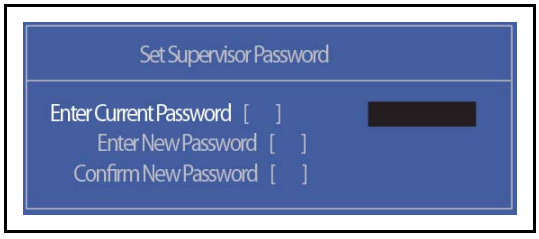

Figure 2-4. Set Supervisor Password

2. Type a new password in the `Enter New Password` field. Passwords are not case sensitive and the length must not exceed 8 alphanumeric characters (A-Z, a-z, 0-9). Retype the password in the `Confirm New Password` field.

+ IMPORTANT:

Use care when typing a password. Characters do not appear on the screen.

3. Press ***Enter***. After setting the password, the computer sets the `User Password` parameter to `Set`.

⇒ NOTE:

`Password on Boot` must be set to `Enabled` to activate password feature.

4. Press ***F10*** to save changes and exit *BIOS Setup Utility*.

Removing a Password

Perform the following:

1. Use the ↑ and ↓ keys to highlight `Set Supervisor Password` and press ***Enter***. The `Set Supervisor Password` dialog box appears:

Figure 2-5. Set Supervisor Password

2. Type current password in `Enter Current Password` field and press ***Enter***.

3. Press ***Enter*** twice without typing anything in `Enter New Password` and `Confirm New Password` fields. Computer will set `Supervisor Password` parameter to `Clear`.
4. Press ***F10*** to save changes and exit the *BIOS Setup Utility*.

Changing a Password

1. Use the ↑ and ↓ keys to highlight `Set Supervisor Password` and press ***Enter***. The `Set Supervisor Password` dialog box appears.

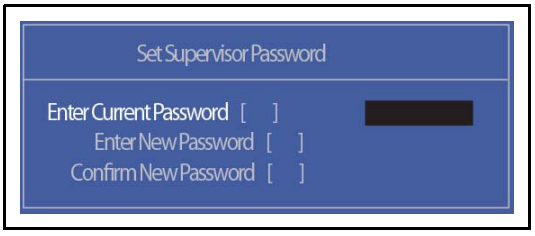

Figure 2-6. Set Supervisor Password

2. Type current password in `Enter Current Password` field and press ***Enter***.
3. Type new password in `Enter New Password` field. Retype new password in `Confirm New Password` field.
4. Press ***Enter***. Computer sets `Supervisor Password` parameter to `Set`.

NOTE:

`Password on Boot` must be set to `Enabled` to activate the password feature.

5. Press ***F10*** to save changes and exit *BIOS Setup Utility*.

If the verification is OK, the screen will show as follows.

Figure 2-7. Setup Notice

The password setting is complete after the user presses ***Enter***.

If the password entered does not match the current password, the screen shows the `Setup Warning` dialog. (Figure 2-8)

Figure 2-8. Setup Warning: Invalid Password

If new password and confirm new password strings do not match, the `Setup Warning` dialog appears (Figure 2-9).

Figure 2-9. Setup Warning: Passwords Do Not Match

Boot

This tab allows changes to the order of boot devices used to load the operating system. Bootable devices include the:

- USB diskette drives
- Onboard hard disk drive
- DVD drive in the module bay

Use ↑ and ↓ keys to select a device and press ***F5*** or ***F6*** to change the value.

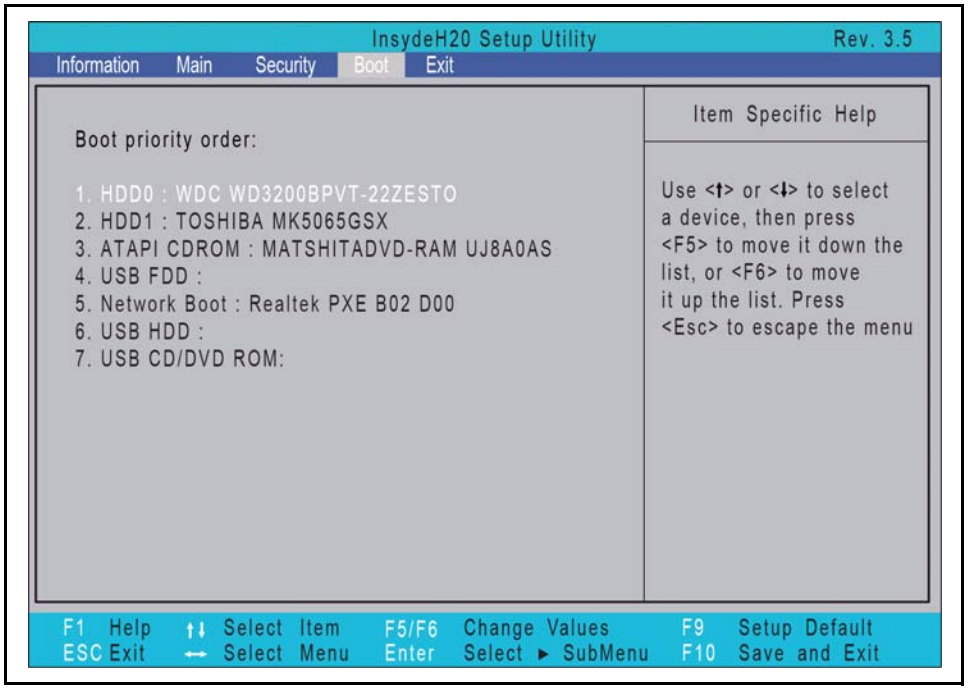
InsydeH20 Setup Utility
Rev. 3.5
Information
Main
Security
Boot
Exit
Boot priority order:
1. HDD0 : WDC WD3200BPVT-22ZESTO
2. HDD1 : TOSHIBA MK5065GSX
3. ATAPI CDROM : MATSHITADVD-RAM UJ8A0AS
4. USB FDD :
5. Network Boot : Realtek PXE B02 D00
6. USB HDD :
7. USB CD/DVD ROM:
Item Specific Help
Use <↑> or <↓> to select a device, then press <F5> to move it down the list, or <F6> to move it up the list. Press <Esc> to escape the menu
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Default
ESC Exit ↔ Select Menu Enter Select ▸ SubMenu F10 Save and Exit

Figure 2-10. BIOS Boot

Exit

The Exit tab allows users to save or discard changes and quit the *BIOS Setup Utility*.

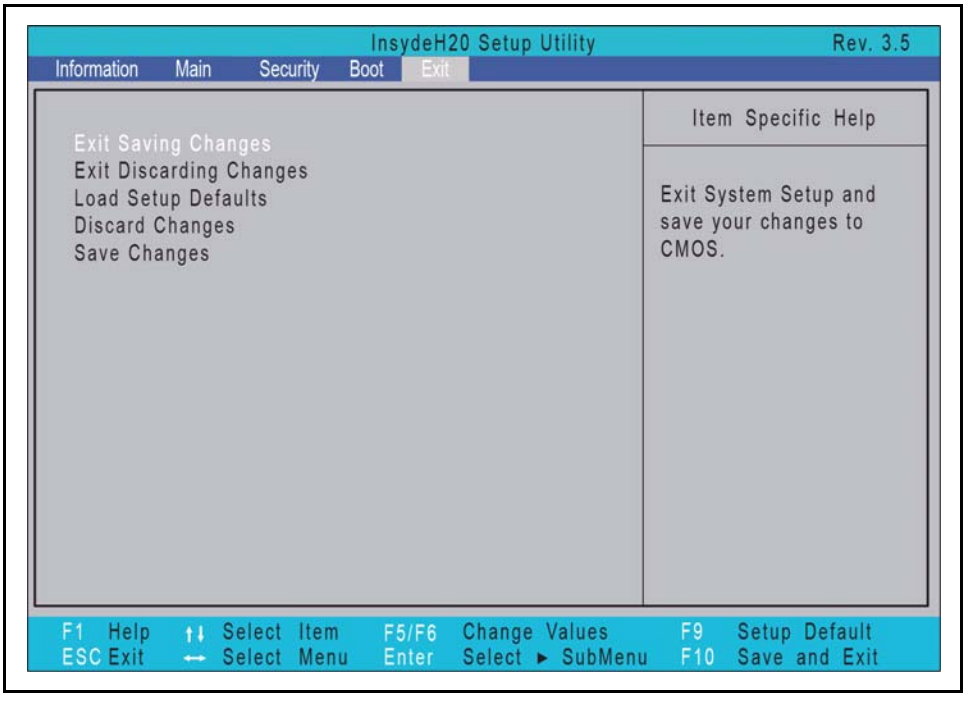

Figure 2-11. BIOS Exit

Table 2-4 describes the parameters in Figure 2-11.

Table 2-4. Exit Parameters

Parameter	Description
Exit Saving Changes	Exit BIOS utility and save setup item changes to system.
Exit Discarding Changes	Exit BIOS utility without saving setup item changes to system.
Load Setup Default	Load default values for all setup items.
Discard Changes	Load previous values of all setup items.
Save Changes	Save setup item changes to system.

BIOS Flash Utilities

BIOS Flash memory updates are required for the following conditions:

- New versions of system programs
- New features or options
- Restore a BIOS when it becomes corrupted.

Use the Flash utility to update the system BIOS Flash ROM.

NOTE:
If a Crisis Recovery Disc is not available, create one before Flash utility is used.

NOTE:
Do not install memory related drivers (XMS, EMS, DPMI) when Flash is used.

NOTE:
Use AC adaptor power supply when running Flash utility. If battery pack does not contain power to finish loading BIOS Flash, do not boot system.

Perform the following to run Flash.

1. Prepare a bootable USB HDD.
2. Copy Flash utilities to bootable USB HDD.
3. Boot system from bootable USB HDD.

NOTE:
Flash utility has auto execution function.

DOS Flash Utility

Perform the following to use the *DOS Flash Utility*:

1. Press ***F2*** during boot to enter `Setup Menu`.
2. Select `Boot Menu` to modify boot priority order.

Example: If using USB HDD to Update BIOS, move USB HDD to position 1.

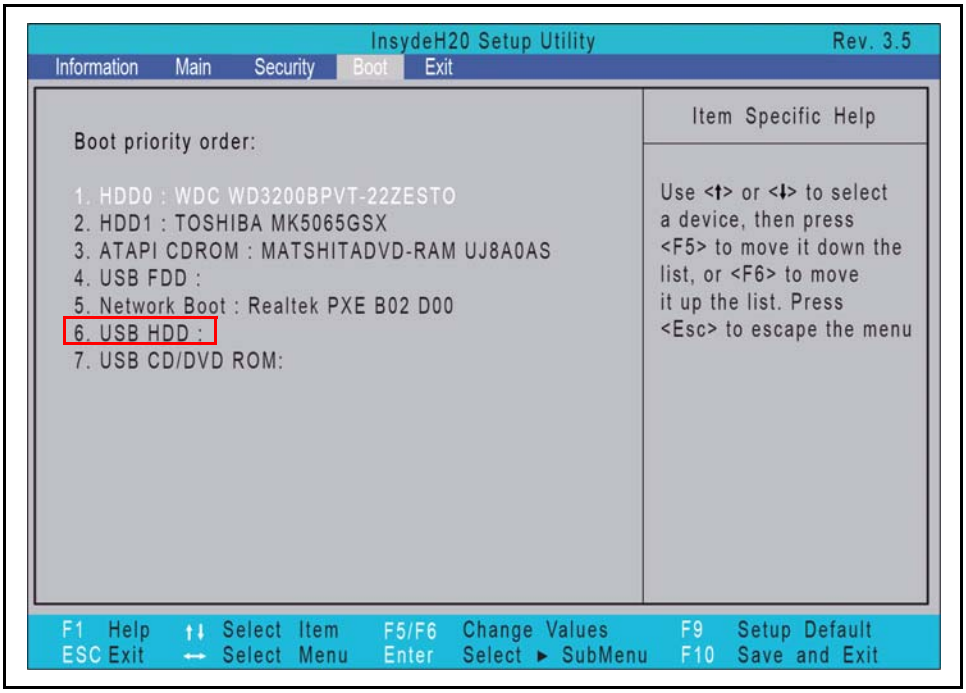
InsydeH20 Setup Utility
Rev. 3.5
Information
Main
Security
Boot
Exit
Boot priority order:
1. HDD0 : WDC WD3200BPVT-22ZESTO
2. HDD1 : TOSHIBA MK5065GSX
3. ATAPI CDROM : MATSHITADVD-RAM UJ8A0AS
4. USB FDD :
5. Network Boot : Realtek PXE B02 D00
6. USB HDD :
7. USB CD/DVD ROM:
Item Specific Help
Use <↑> or <↓> to select a device, then press <F5> to move it down the list, or <F6> to move it up the list. Press <Esc> to escape the menu
F1 Help ↑↓ Select Item F5/F6 Change Values F9 Setup Default
ESC Exit ↔ Select Menu Enter Select ▸ SubMenu F10 Save and Exit

Figure 2-12. BIOS Boot

3. Insert the USB HDD and reboot computer.
4. Execute **`XEWX100.BAT`** to update BIOS. Flash process begins as shown in Figure 2-13.

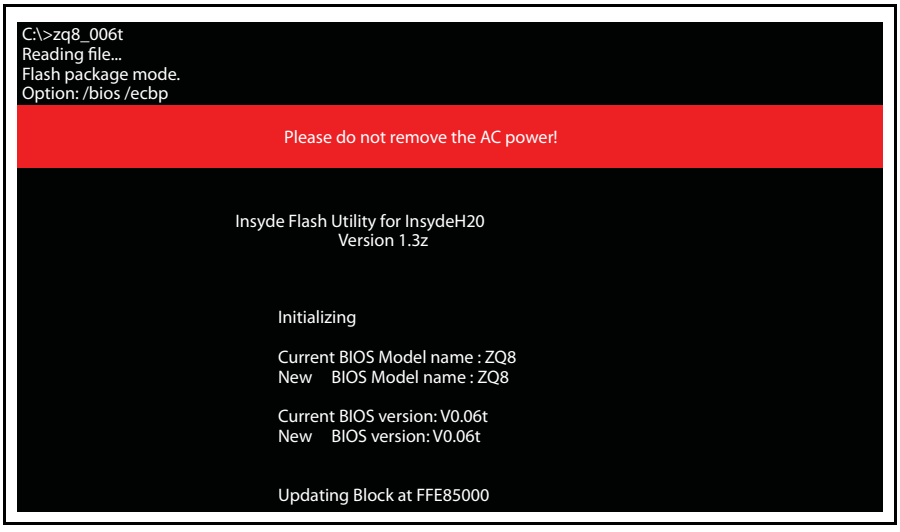

Figure 2-13. DOS Flash Process

5. Flash is complete when the message, `Flash Programming Complete` is shown. System will restart automatically when finished.

NOTE:

If AC power is not connected, the following message is shown (Figure 2-14). Plug in the AC power to continue.

Figure 2-14. AC Power Warning

Perform the following to use the WinFlash Utility:

1. Double-click WinFlash executable.
2. Click ***OK*** to begin update. A progress screen is shown. (Figure 2-15)

Figure 2-15. InsydeFlash

Remove HDD/BIOS Password Utilities

This section provides details about removing HDD/BIOS passwords.

Remove HDD Password as follows:

NOTE:

If the HDD password is incorrectly entered three times, an error is generated. (Figure 2-16)

Figure 2-16. Password Error Status

To reset the HDD password, perform the following:

1. From `Password Error Status` dialog shown in Figure 2-16, press ***Enter*** to continue.
2. The `Enter Unlock Password` dialog (Figure 2-17) is shown.

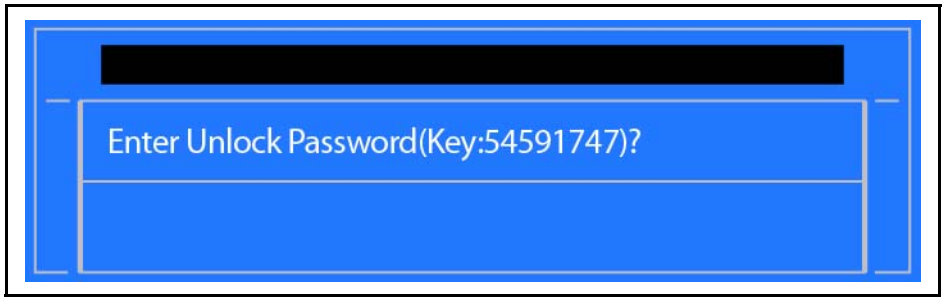

Figure 2-17. Unlock Password Key

NOTE:

An key code is generated for use with unlocking utility. Make note of this code.

3. On separate, compatible device, boot to DOS.
4. Execute *UnlockHD.exe* (Figure 2-18) to create a password unlock code. Use the format <*`UnlockHD [key code]`*> with the code noted in the Figure 2-17.

   Example: **UnlockHD 54591747**

The command generates a password which can be used for unlocking the HDD.

```
Password: 41499389
```

Figure 2-18. Unlock Password

5. On original device, enter password (Figure 2-18) in `Enter Unlock Password` dialog (Figure 2-17).

If wrong supervisor password is entered three times, the message `System will halt!` is displayed on screen.

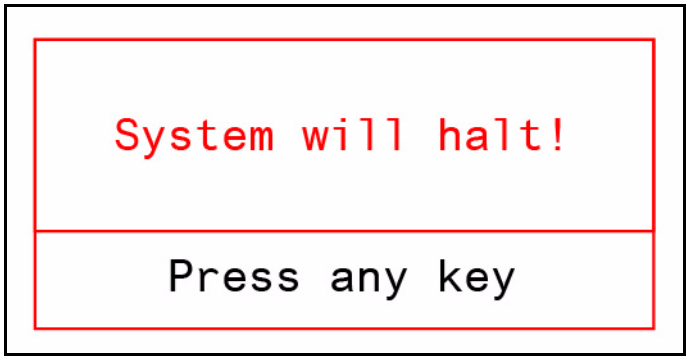

Figure 2-19. Supervisor Password Error

If user is unable to obtain correct password then it must be removed. There are two methods to do this.

Method 1:

If BIOS menu item `Power on Password` is `set to Enabled`, then Crisis Recovery disc must be used.

Method 2:

If BIOS menu item `Power on Password` is set to `Disabled`.

1. Boot to DOS and execute *ClearSuPw.exe.* (Figure 2-20)

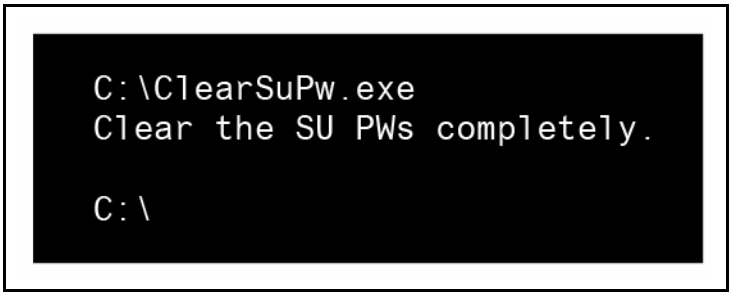

Figure 2-20. Clear Supervisor Password Utility

2. When message `Clear the SU Pws completely` is displayed, supervisor password has been removed.

Using DMITools

The DMI (Desktop Management Interface) Tool copies BIOS information to EEPROM (Electrically Erasable Programmable Read-Only Memory). Used in the DMI pool for hardware management.

When the BIOS shows **`Verifying DMI pool data,`** it is checking that the table correlates with the hardware before sending information to the operating system (Windows, etc.).

To update the DMI Pool, perform the following:

1. Boot to DOS.
2. Execute **`qdmi30a.exe`**. To execute a specific function, select the associated menu number.

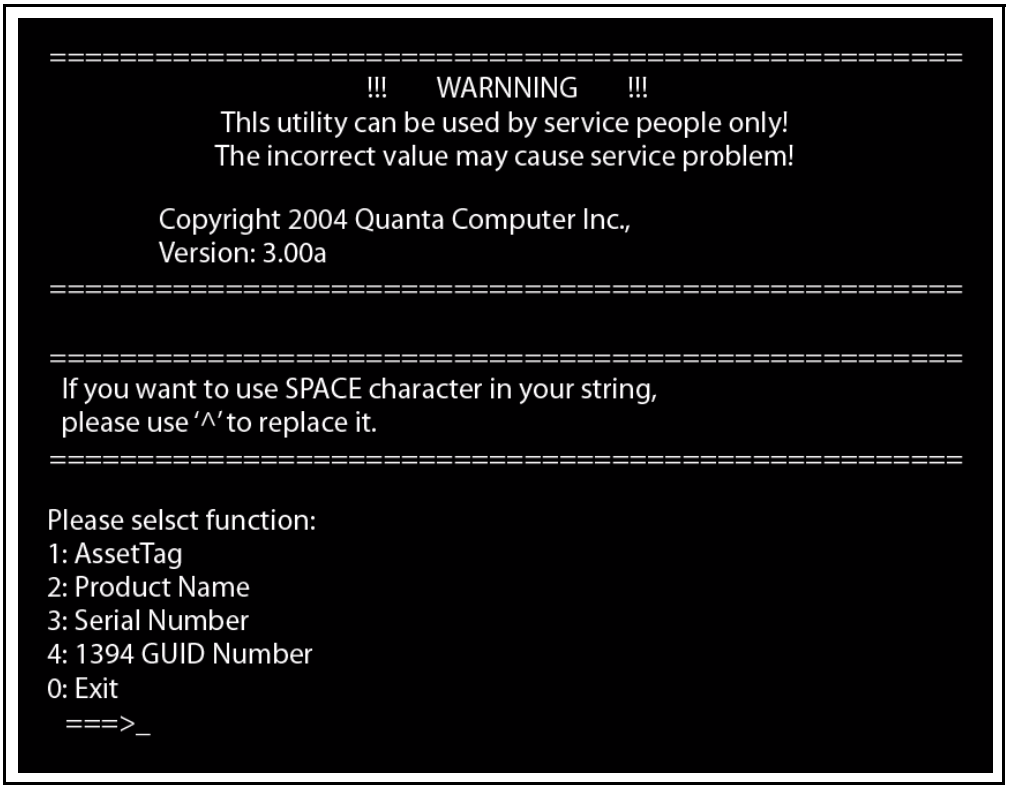
!!! WARNNING !!!
Thls utility can be used by service people only!
The incorrect value may cause service problem!
Copyright 2004 Quanta Computer Inc.,
Version: 3.00a
If you want to use SPACE character in your string,
please use '^' to replace it.
Please selsct function:
1: AssetTag
2: Product Name
3: Serial Number
4: 1394 GUID Number
0: Exit
===>_

Figure 2-21. DMI Tools Main Menu Screen

3. Press **1** to modify the asset tag key.

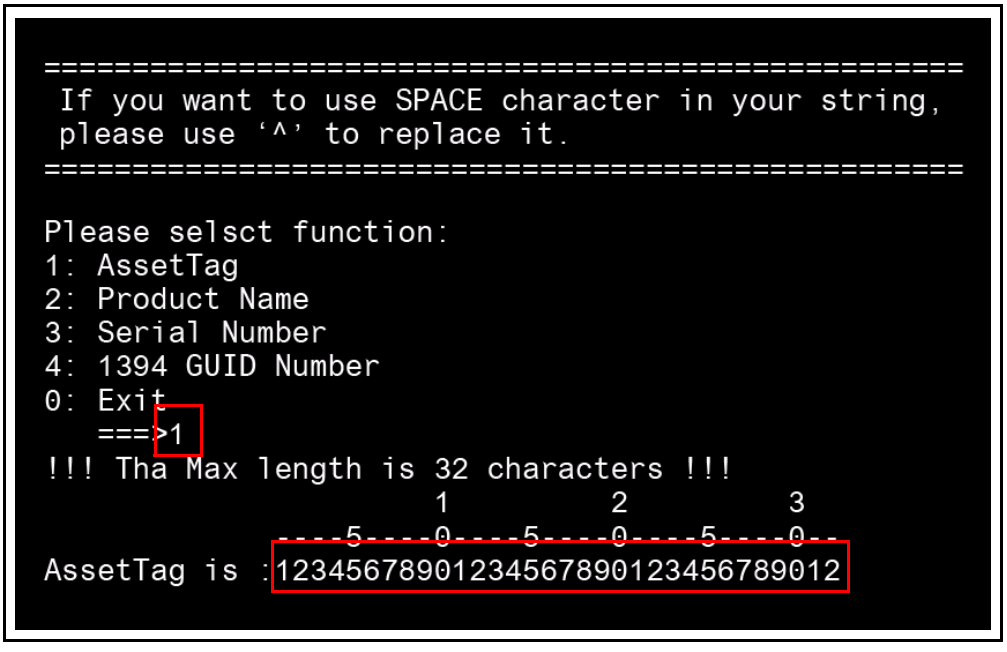

Figure 2-22. Asset Tag Menu Item

4. Press **2** to modify the product number key.

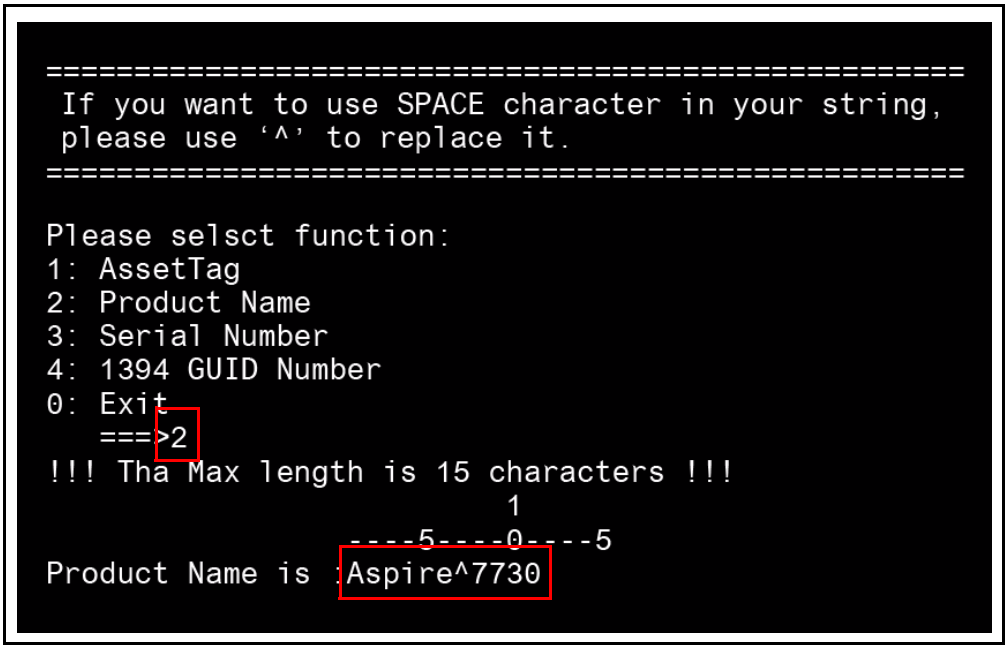

Figure 2-23. Product Name Menu Item

5. Press **3** to modify serial number key.

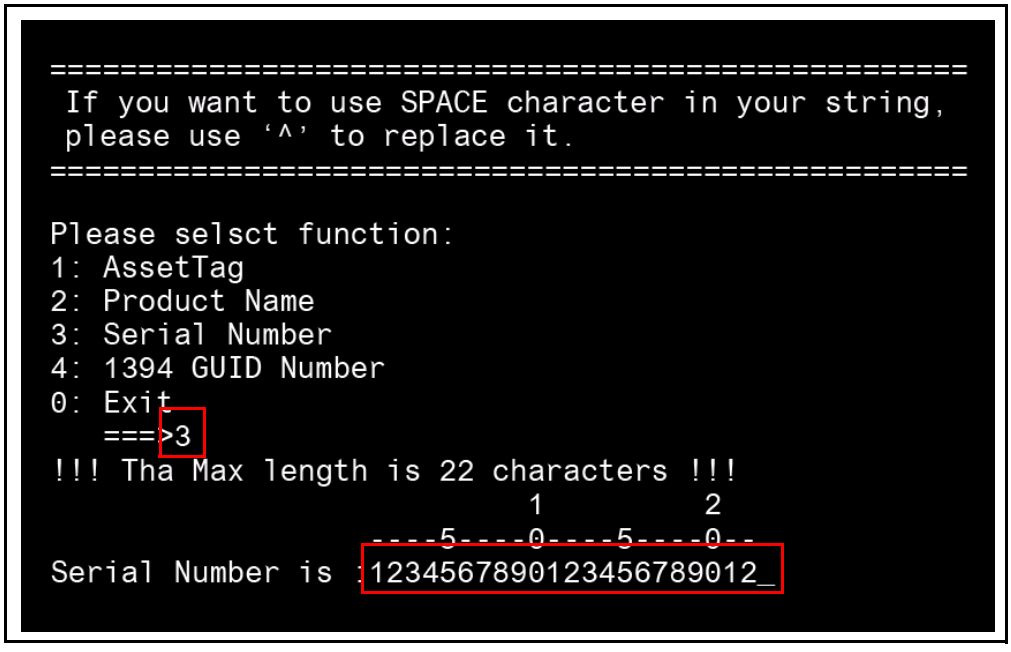

Figure 2-24. Serial Number Menu Item

6. Press **4** to modify the 1394 GUID number key.

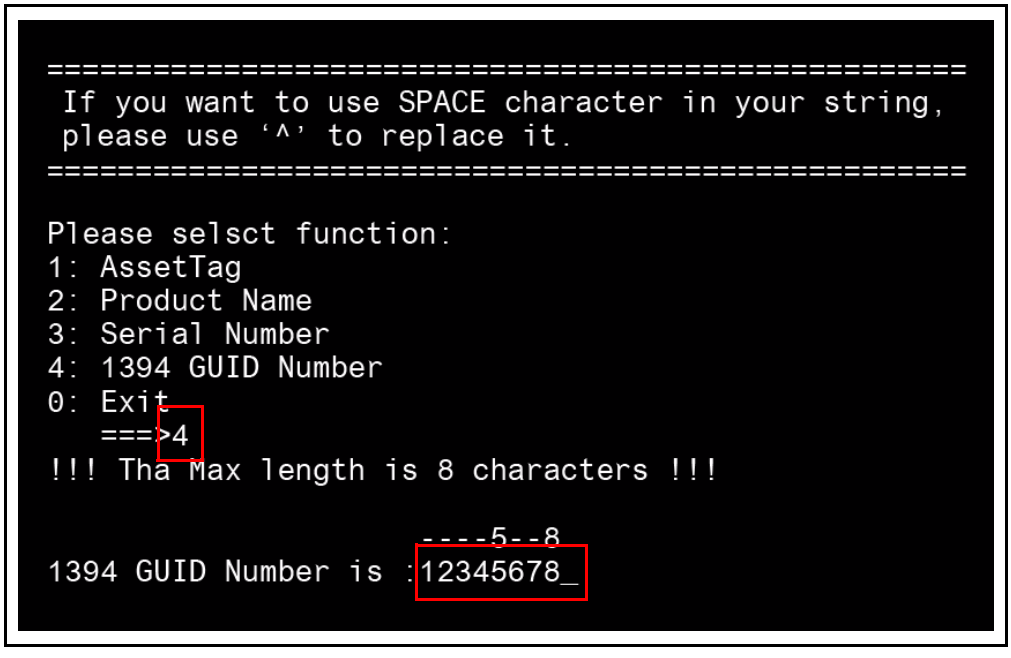
If you want to use SPACE character in your string,
please use '^' to replace it.
Please selsct function:
1: AssetTag
2: Product Name
3: Serial Number
4: 1394 GUID Number
0: Exit
===>4
!!! Tha Max length is 8 characters !!!
----5--8
1394 GUID Number is :12345678_

Figure 2-25. 1394 GUID Number Menu Item

7. Press **0** to exit.

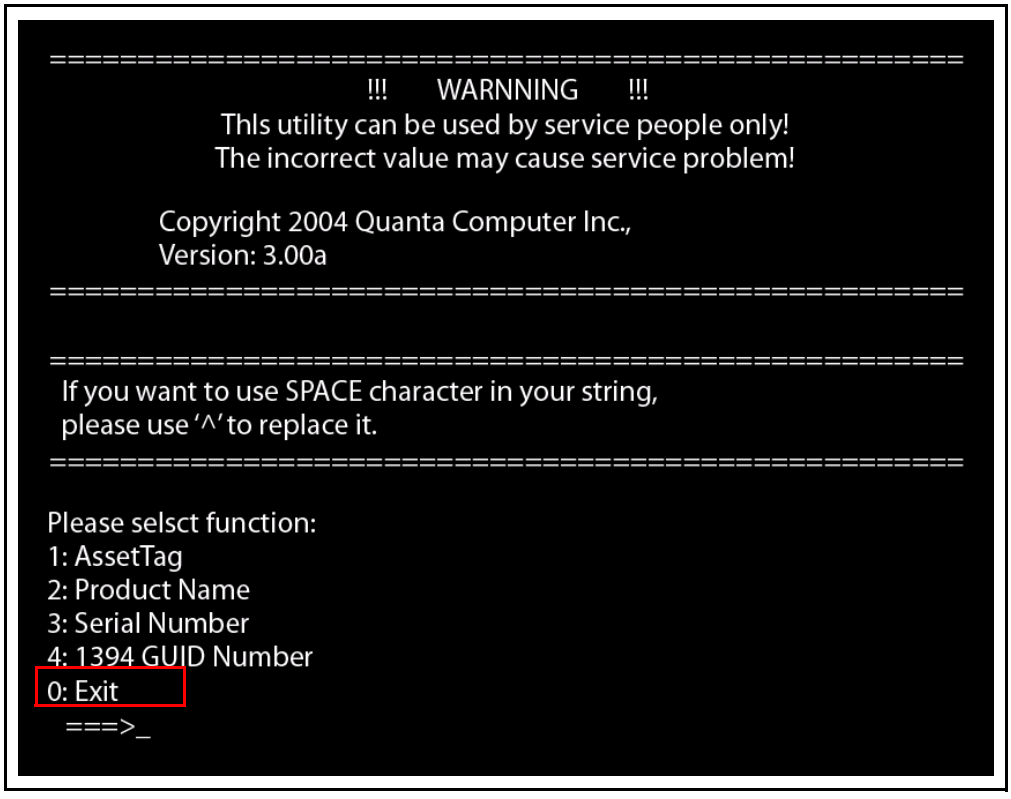
!!! WARNNING !!!
Thls utility can be used by service people only!
The incorrect value may cause service problem!
Copyright 2004 Quanta Computer Inc.,
Version: 3.00a
If you want to use SPACE character in your string,
please use '^' to replace it.
Please selsct function:
1: AssetTag
2: Product Name
3: Serial Number
4: 1394 GUID Number
0: Exit
===>_

Figure 2-26. Exit Menu Item

8. At the command prompt, type **VEEPROM** to write any changes in the data to the EEPROM.

Figure 2-27. VEEPROM Command Prompt

NOTE:
When using any of the write options, restart the system to make the new DMI data effective.

Using the LAN MAC EEPROM Utility

Perform the following steps to write MAC (Media Access Control) information to EEPROM:

1. Start the computer and press ***F2*** during boot to enter the `Setup Menu`.
2. Select `Boot Menu` to modify the boot priority order.
3. Insert the USB HDD and reboot the computer.
4. Execute **<MAC.bat xxxxxx>**, where “xxxxxx” is a 6 character MAC address, to write the MAC information to EEPROM.

CHAPTER 3
Machine Maintenance Procedures

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Machine Maintenance Procedures

Introduction

This chapter contains general information about the computer, a list of tools needed to perform the required maintenance and step by step procedures on how to remove and install components from the computer.

General Information

The product previews seen in the following procedures may not represent the final product color or configuration. Cable paths and positioning may also differ from the actual model. During the removal and installation of components, make sure all available cable channels and clips are used and that the cables are installed in the same position.

All prerequisites must be performed prior to performing maintenance.

Tools

The following tools are required to perform the following maintenance procedures:

- Wrist grounding strap and conductive mat
- Flat screwdriver
- Philips screwdriver

Screw Table

Table 3-1 contains a complete list of the screws and fasteners associated with this computer.

Table 3-1. Screws

M2.0*3.0-I Qty. - 18 P/N - 	M2.5*4-I Qty. - 11 P/N - 	M2.5*6.0-I Qty. - 35 P/N -
M2.5*4.0-I Qty. - 30 P/N - 		

Maintenance Flowchart

The flowchart in Figure 3-1 provides a graphic representation of the module removal and installation sequences. It provides information on what components may need to be removed and installed during servicing.

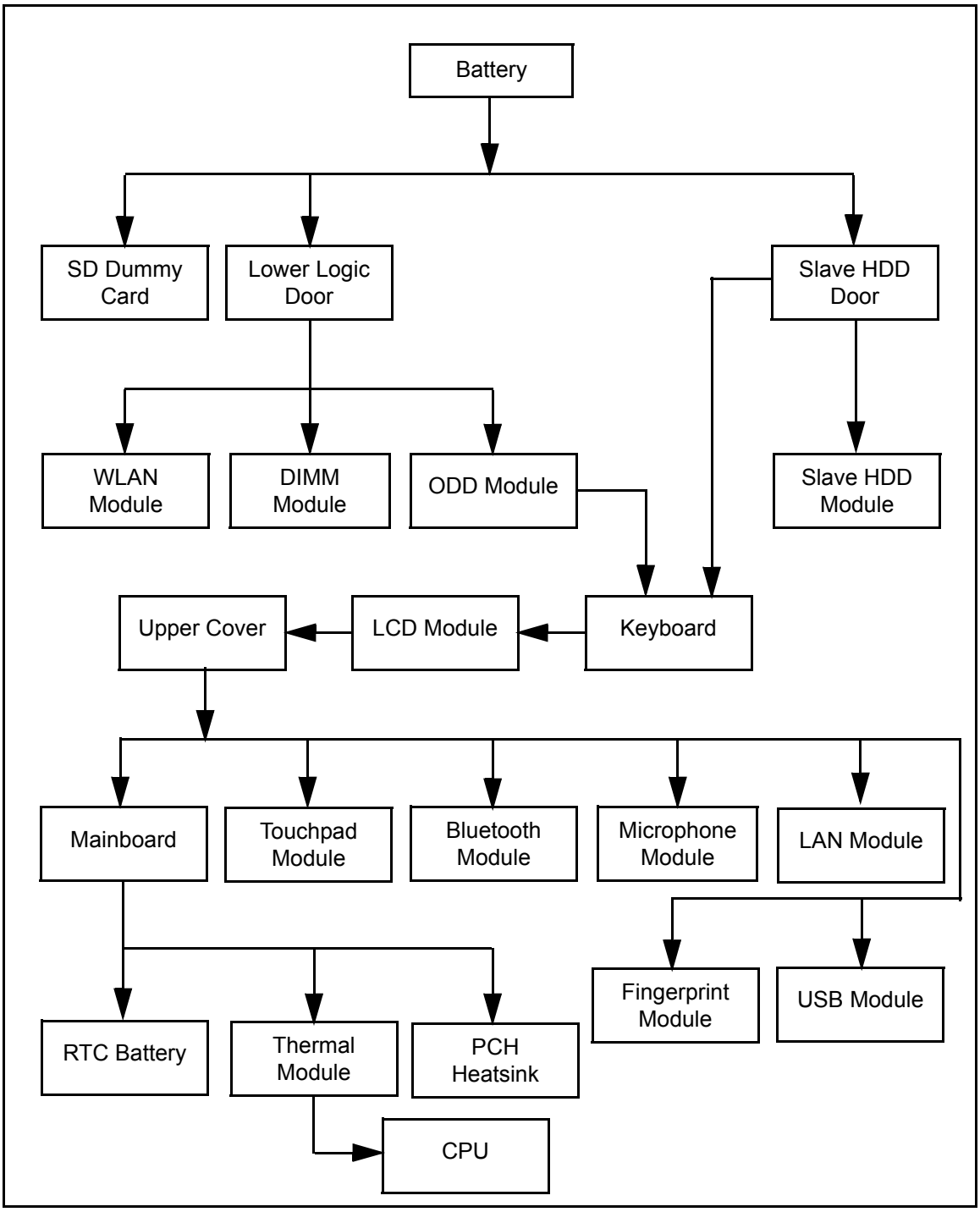

Figure 3-1. Maintenance Flow

Getting Started

Flowchart Figure 3-1identifies sections illustrating the entire removal and install sequence. Observe the order of the sequence to avoid damage to any of the hardware components.

Perform the following prior to performing any maintenance procedures:

1. Remove power (A) from the system and peripherals.
2. Remove all cables from system.

Figure 3-2. AC Adapter Outlet

3. Place system on a stable work surface.

Battery Pack Removal

1. Place computer on flat surface, battery side up.
2. Push battery lock/unlock latch (A) to unlock position.
3. Push and hold battery release latch (B) to release position.
4. Pull battery pack (C) from lower cover.

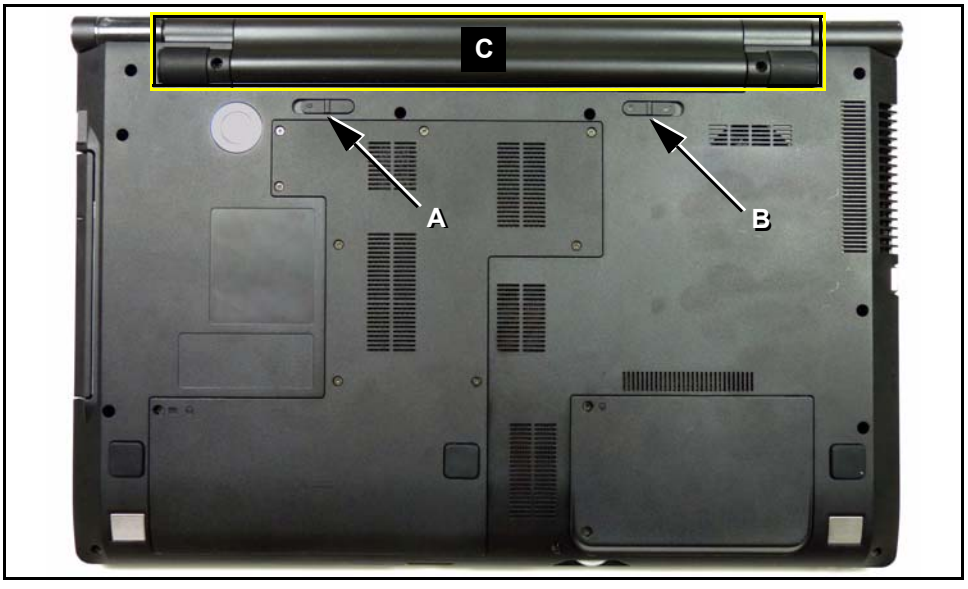

Figure 3-3. Battery

+ IMPORTANT:

Follow local regulations for battery (C, Figure 3-3) disposal.

Battery Pack Installation

1. Hold latch (B) in release position and install battery (C). Refer to Figure 3-3.
2. Lock battery lock/unlock latch (A).

Dummy Card Removal

1. Push dummy card (A) in to release it from spring latch.
2. Remove dummy card (A).

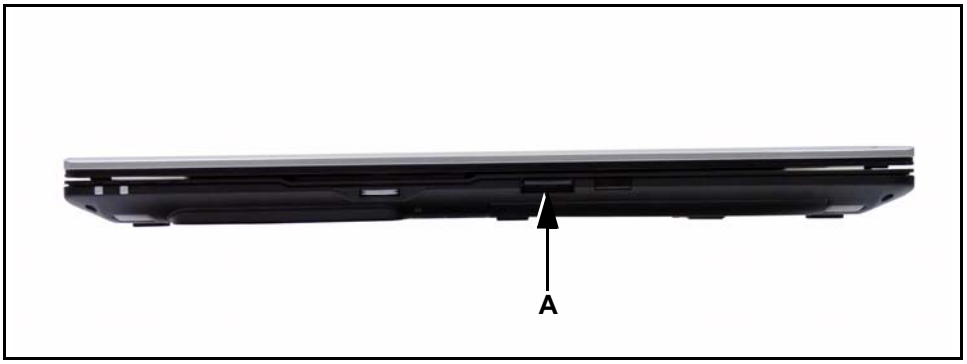

Figure 3-4. Dummy Card

Dummy Card Installation

1. Insert dummy card (A).
2. Push card until spring latch locks. Refer to Figure 3-4.

Base Door Removal

Prerequisite:

Battery Pack Removal

1. Locate base door (C) on lower cover as shown in Figure 3-5.
2. Loosen nine (9) captive screws (A).
3. Remove door from lower cover.

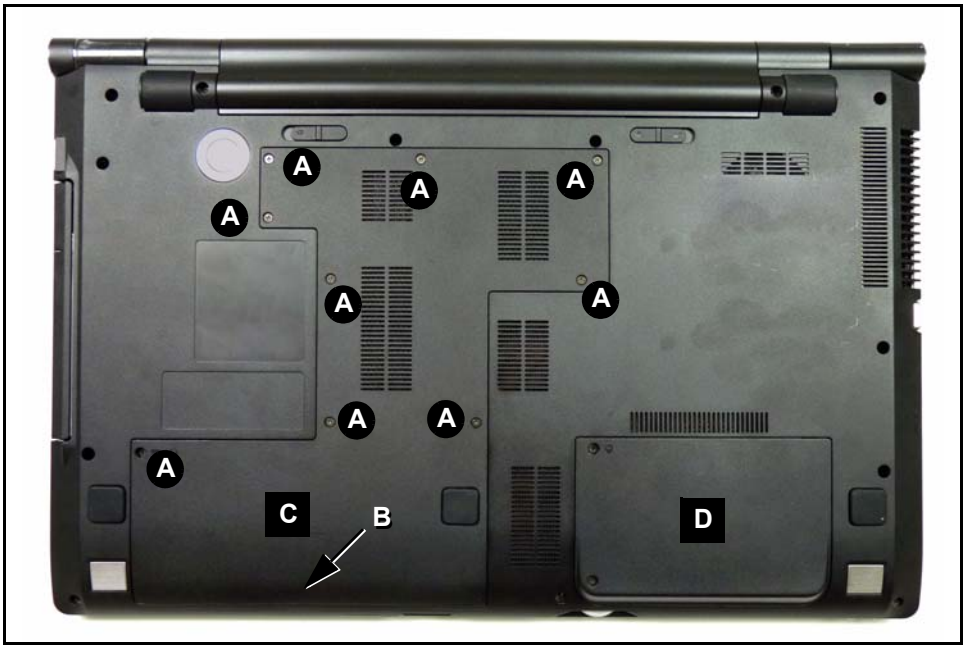

Figure 3-5. Lower Cover with Battery

Base Door Installation

1. Insert door flanges into slots (B) on lower cover. Refer to Figure 3-5.
2. Secure door to lower cover with nine (9) captive screws (A).
3. Install battery pack.

HDD (Hard Disk Drive) Module Removal

Prerequisite:

Base Door Removal

1. Locate HDD module (A) on lower cover as shown in Figure 3-6.

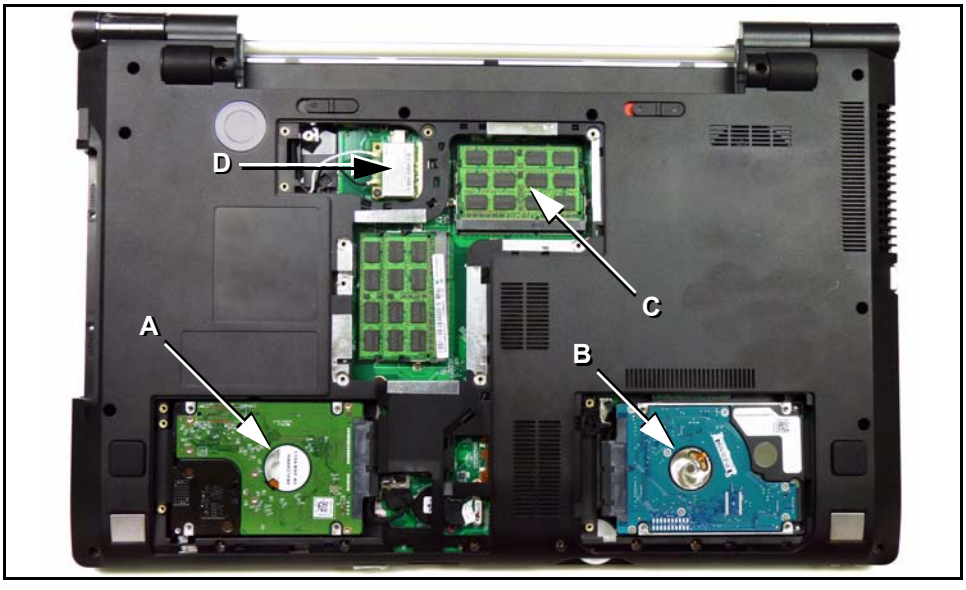

Figure 3-6. Lower Cover Overview with Base Door Removed

2. Disconnect module connector (A) from mainboard as shown in Figure 3-7.
3. Lift module out of module bay.
4. Disconnect module connector (B) from module.

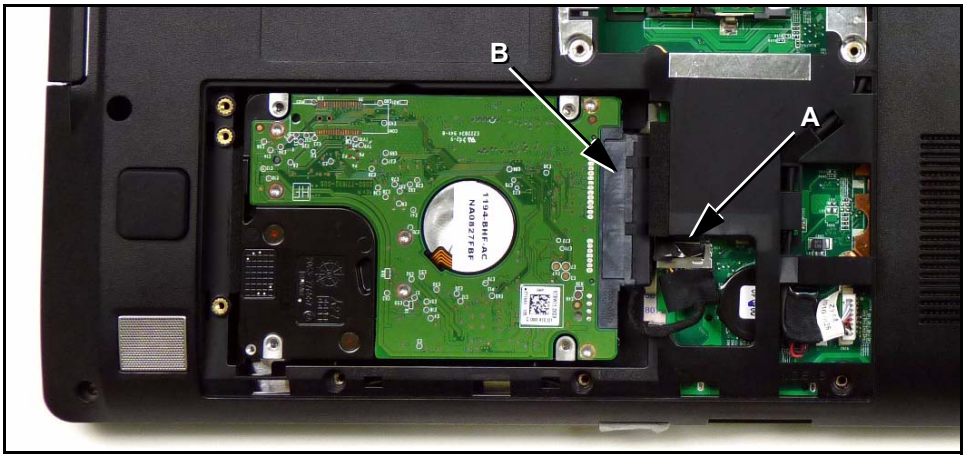

Figure 3-7. HDD Module

HDD Module Installation

1. Connect HDD connector (B) to module. Refer to Figure 3-7.
2. Place module into module bay.
3. Connect module connector (A) to mainboard.
4. Install base door.

DIMM (Dual In-line Memory Module) Module Removal

Prerequisite:

Base Door Removal

1. Locate module (C) on lower cover. Refer to Figure 3-6.
2. Push module clips (A) outwards as shown in Figure 3-8.
3. Pull module out of mainboard connector (B).
4. Repeat steps 2 and 3 for remaining modules.

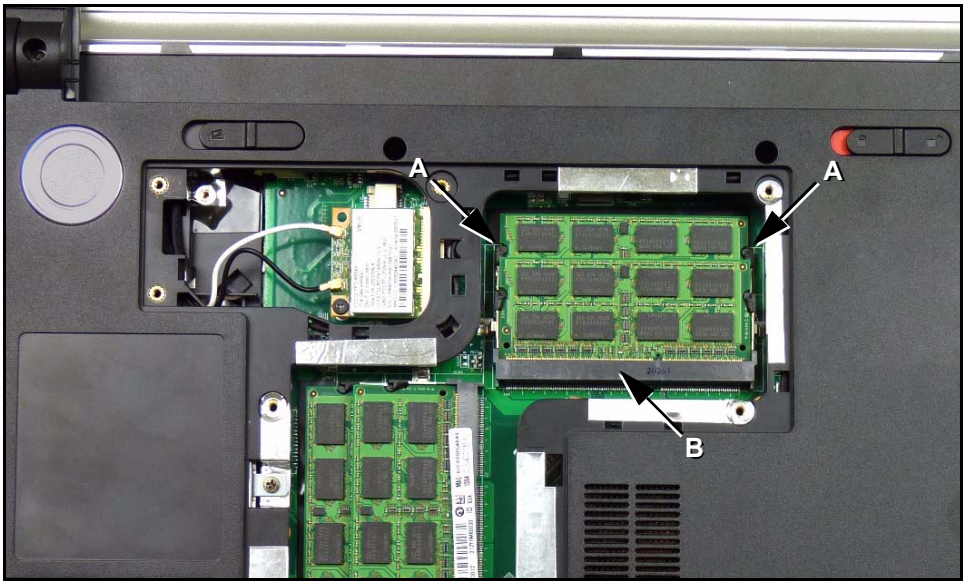

Figure 3-8. DIMM Modules

DIMM Module Installation

1. Install module into mainboard connector (B). Refer to Figure 3-8.
2. Push down on module until module clips (A) lock in place.
3. Repeat steps 2 and 3 for remaining modules.
4. Install base door.

WLAN (Wireless Local Area Network) Module Removal

Prerequisite:

Base Door Removal

1. Locate module (D) on lower cover. Refer to Figure 3-6.
2. Disconnect main (A) and auxiliary (B) antenna cables from module as shown in Figure 3-9.
3. Remove screw (C) (M2.5*2.3) from mainboard.
4. Remove module from mainboard connector (D).

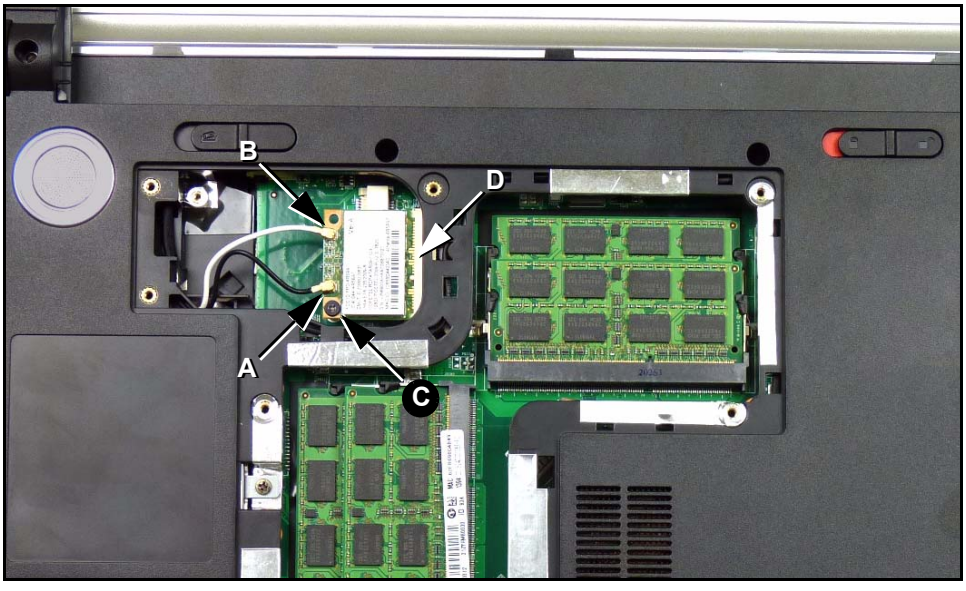

Figure 3-9. WLAN Module

NOTE:

Main (black) antenna connector is close to ODD module. Auxiliary (white) antenna connector is close to battery bay.

WLAN Module Installation

1. Insert module into mainboard connector (D). Refer to Figure 3-9.
2. Install and secure screw (C) (M2.5*2.3) to mainboard.
3. Install main (A) and auxiliary (B) antenna cables on WLAN module.
4. Install base door.

Slave HDD Door Removal

Prerequisite:

Battery Pack Removal

1. Locate slave HDD door (D) on lower cover. Refer to Figure 3-5.
2. Loosen two (2) captive screws (A) as shown in Figure 3-10.
3. Remove door from lower cover.

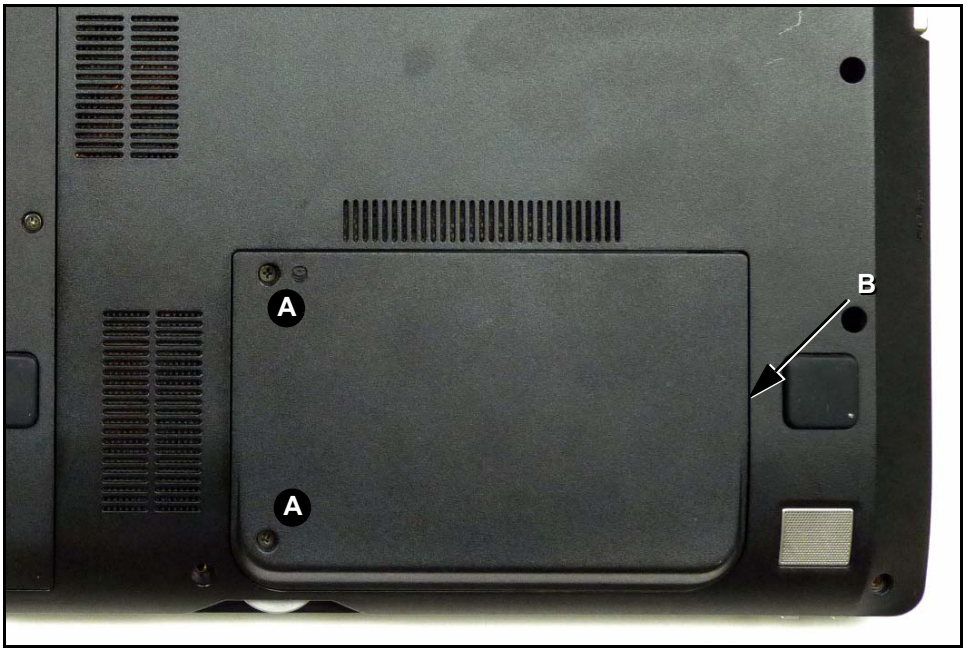

Figure 3-10. Slave HDD Door

Slave HDD Door Installation

1. Insert door flanges into slots (B) on lower cover. Refer to Figure 3-10.
2. Secure door to lower cover with two (2) captive screws.
3. Install battery pack.

Slave HDD Module Removal

Prerequisite:

Slave HDD Door Removal

1. Locate module (B) on lower cover. Refer to Figure 3-6.
2. Disconnect module connector (A) from mainboard as shown in Figure 3-11.
3. Lift module from module bay.
4. Disconnect module connector (B) from module.

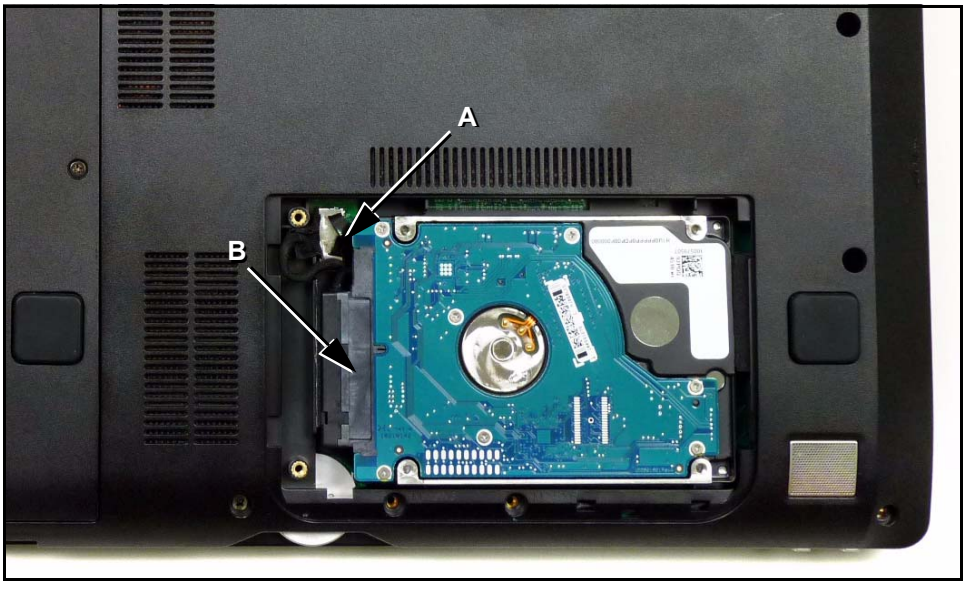

Figure 3-11. Slave HDD Module

Slave HDD Module Installation

1. Connect module connector (B) to module. Refer to Figure 3-11.
2. Place module into module bay.
3. Connect module connector (A) to mainboard.
4. Install slave HDD door.

ODD (Optical Disk Drive) Module Removal

Prerequisite:

Base Door Removal

1. Remove screw (A) (M2.5*6.0-I) from lower cover as shown in Figure 3-12.
2. Remove module (B) from module bay.

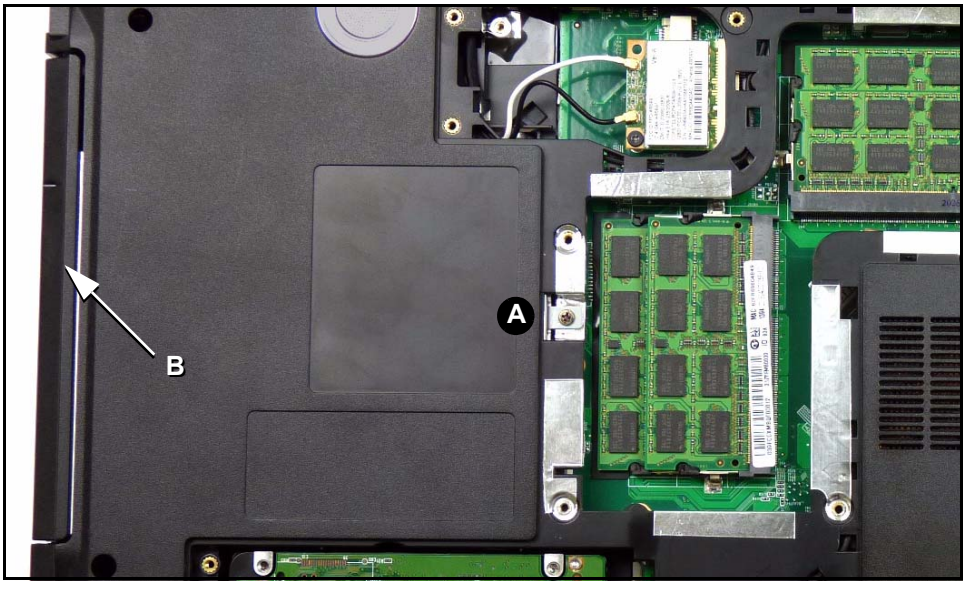

Figure 3-12. ODD Module in Lower Cover

3. Remove two (2) screws (C) (M2.0*3.0-I) from module as shown in Figure 3-13.
4. Remove module bracket (D) from module.
5. Remove module bezel (E) from module.

Figure 3-13. ODD Module

ODD Module Installation

1. Install module bezel (E) on module. Refer to Figure 3-13.
2. Install module bracket (D) on module and secure two (2) screws (C) (M2.0*3.0-I).
3. Insert module (B) into module bay. Refer to Figure 3-12.
4. Install and secure screw (A) (M2.5*6.0-I) to lower cover.
5. Install base door.

Keyboard Removal

Prerequisite:

ODD (Optical Disk Drive) Module Removal

Slave HDD Door Removal

1. Remove eighteen (18) screws (A) (M2.5*6.0-I) and two (2) screws (B) (M2.5*2.3) from lower cover as shown in Figure 3-14.

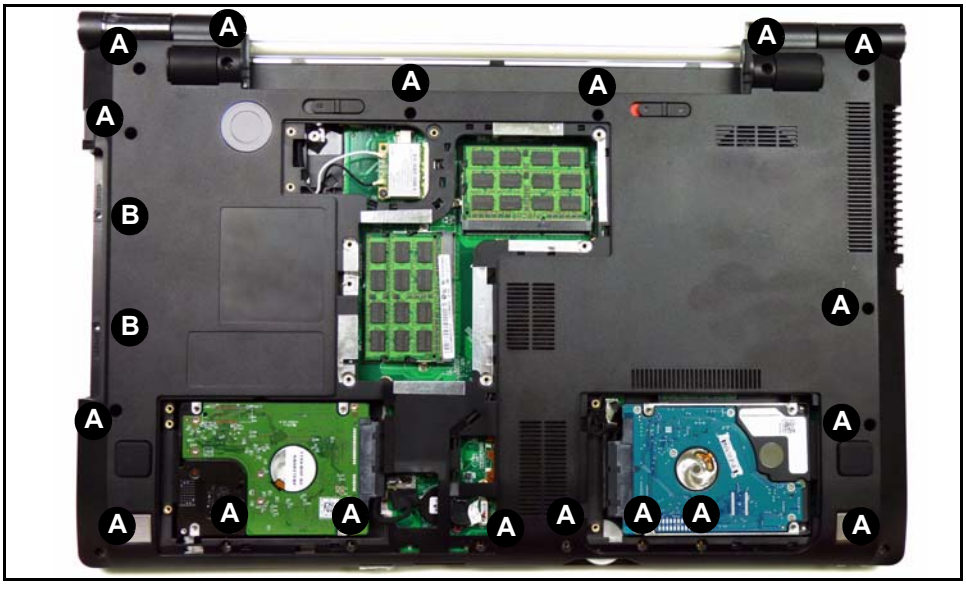

Figure 3-14. Lower Cover Screws

2. Flip computer over onto lower cover. Refer to Figure 3-15.

3. Lift keyboard frame from upper cover, starting from top edge (A).

Figure 3-15. Keyboard Frame

⚠ CAUTION:

Keyboard FPC (Flexible Printed Circuit) can be damaged if removed while mainboard connector is locked.

4. Carefully flip keyboard as shown in Figure 3-16.
5. Disconnect keyboard FPC (A) from mainboard connector (B).

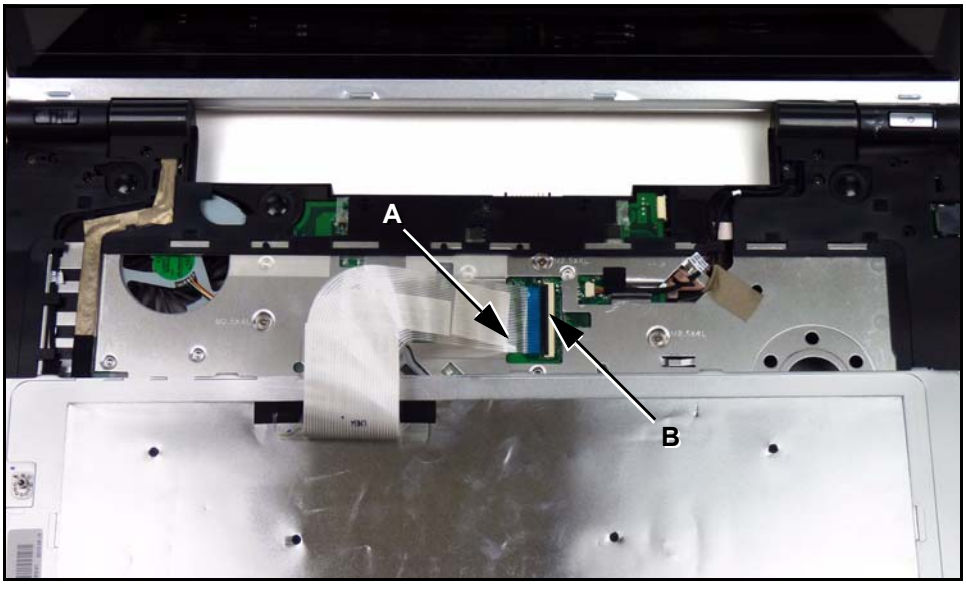

Figure 3-16. Keyboard FPC

6. Remove six (6) screws (A) (M1.6*1.35-I) from keyboard frame as shown in Figure 3-17.

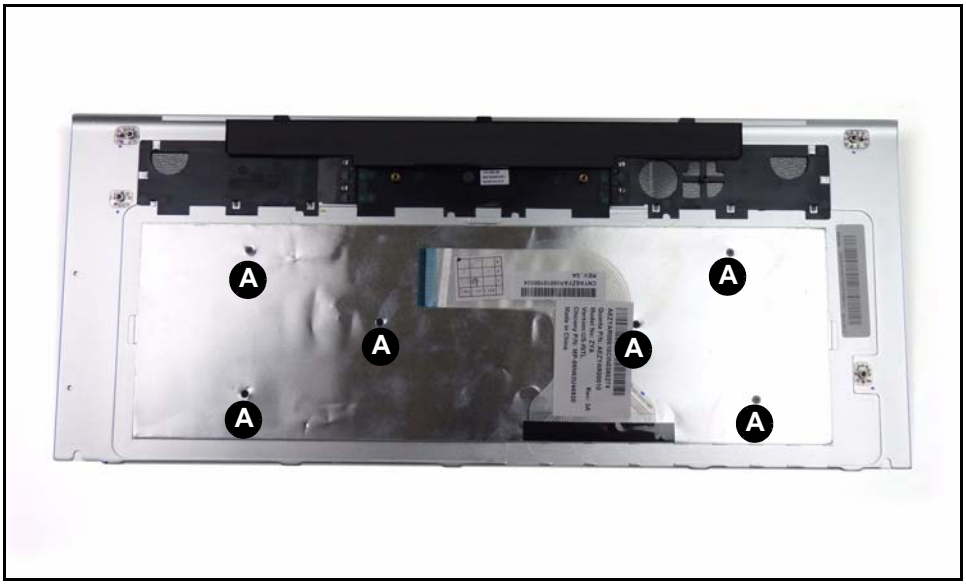

Figure 3-17. Keyboard Module

Keyboard Installation

1. Install module on frame. Refer to Figure 3-17.
2. Install and secure six (6) screws (A) (M1.6*1.35-I) to keyboard frame.
3. Insert keyboard frame flanges (Figure 3-18) into upper cover slots.

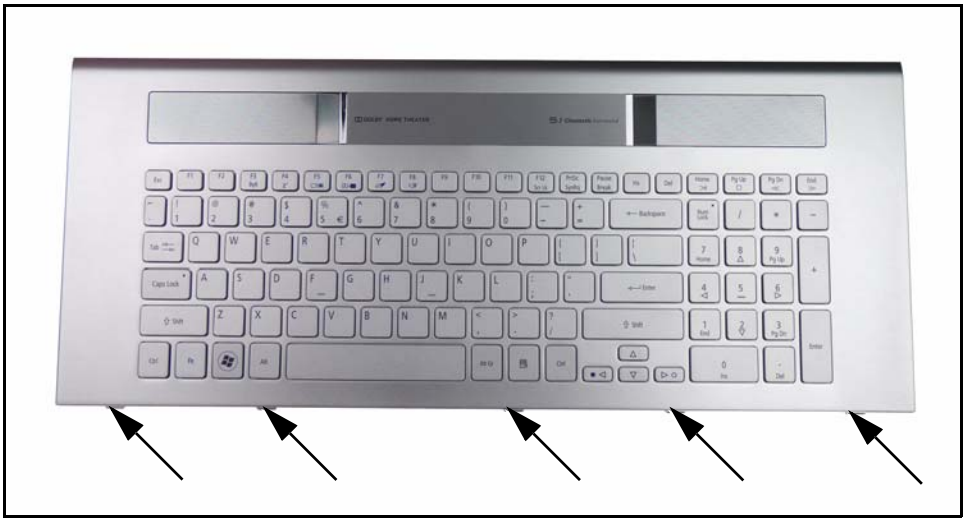

Figure 3-18. Keyboard Frame Flanges

4. Flip keyboard frame over until keyboard FPC (A) can be connected to mainboard connector (B). Refer to Figure 3-16.

5. Place keyboard frame flush against the upper cover. Refer to Figure 3-15.
6. Install and secure eighteen (18) screws (A) (M2.5*6.0-I) and two (2) screws (B) (M2.5*2.3) to lower cover. Refer to Figure 3-14.
7. Install slave HDD door.
8. Install ODD module.

LCD (Liquid Crystal Display) Module Removal

Prerequisite:

Keyboard Removal

1. Flip computer over onto LCD cover. Refer to Figure 3-14.
2. Disconnect WLAN antenna cables (A) from WLAN module connectors as shown in Figure 3-19.

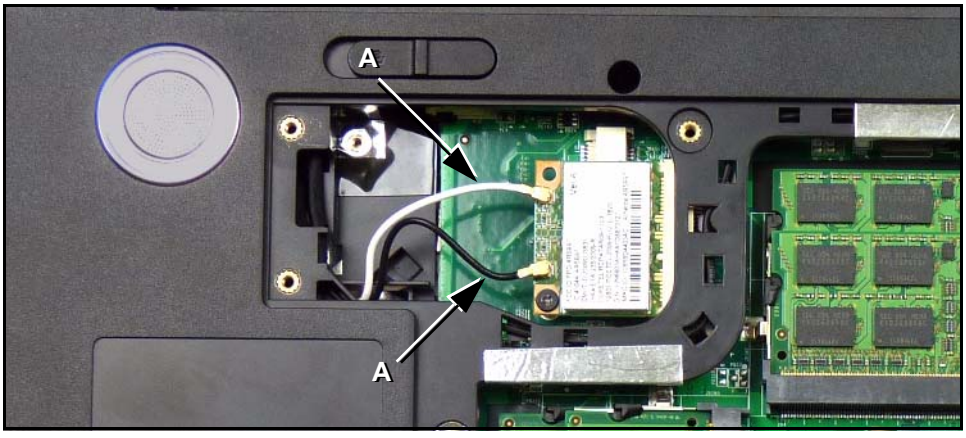

Figure 3-19. WLAN Module Cables

3. Remove two (2) screws (A) (M2.5*4.0-I) from left and right hinge covers as shown in Figure 3-20.
4. Remove hinge covers (B).

Figure 3-20. LCD Module Hinge Covers

5. Disconnect arcade module power (A), LVDS (B), WLAN (C), and power module cable (D) as shown in Figure 3-21.

6. Remove adhesive tape securing WLAN cable (C) to upper cover.
7. Pull WLAN antenna cable up through upper cover.
8. Release all cables from guides.

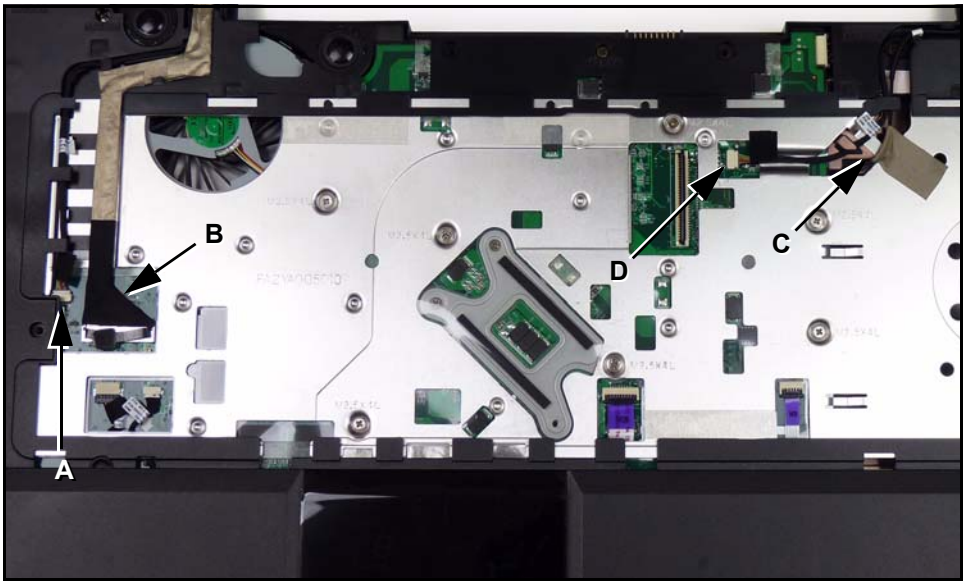

Figure 3-21. LCD Module Cables

9. Remove six (6) screws (E) (M2.0*3.0-I) from LCD module hinges as shown in Figure 3-22.

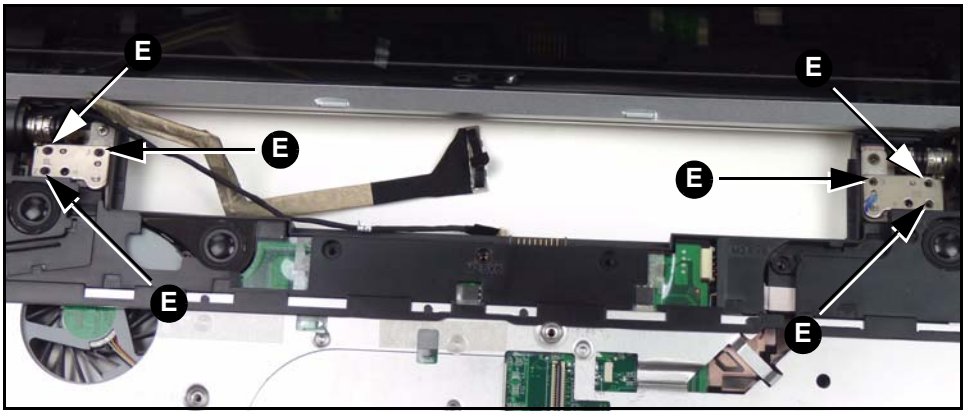

Figure 3-22. LCD Module Hinge Screws

10. Remove LCD module from chassis.

⚠ CAUTION:

Make sure all cables are clear of device to avoid damage during removal.

LCD Module Installation

1. Install LCD module on chassis.
2. Install and secure six (6) screws (E) (M2.0*3.0-I) to chassis. Refer to Figure 3-22.
3. Put WLAN antenna cable down through upper cover and put all cables in correct guides. Refer to Figure 3-21.
4. Put adhesive tape holding WLAN cable (C) on upper cover.
5. Connect arcade module power (A)，LVDS (B)，WLAN (C), and power module cable (D) to mainboard connectors.
6. Install hinge covers (B). Refer to Figure 3-20.
7. Install and secure two (2) screws (A) (M2.5*4.0-I) to chassis.
8. Flip computer over onto LCD cover. Refer to Figure 3-14.
9. Connect WLAN antenna cables (A) to WLAN module connectors. Refer to Figure 3-19.
10. Install keyboard module.

Upper Cover Removal

Prerequisite:

LCD (Liquid Crystal Display) Module Removal

1. Disconnect touchpad module FFC (Flat Flexible Cable) (A), speaker cable (B), Bluetooth cable (C), and microphone cable (D) from mainboard connectors as shown in Figure 3-23.

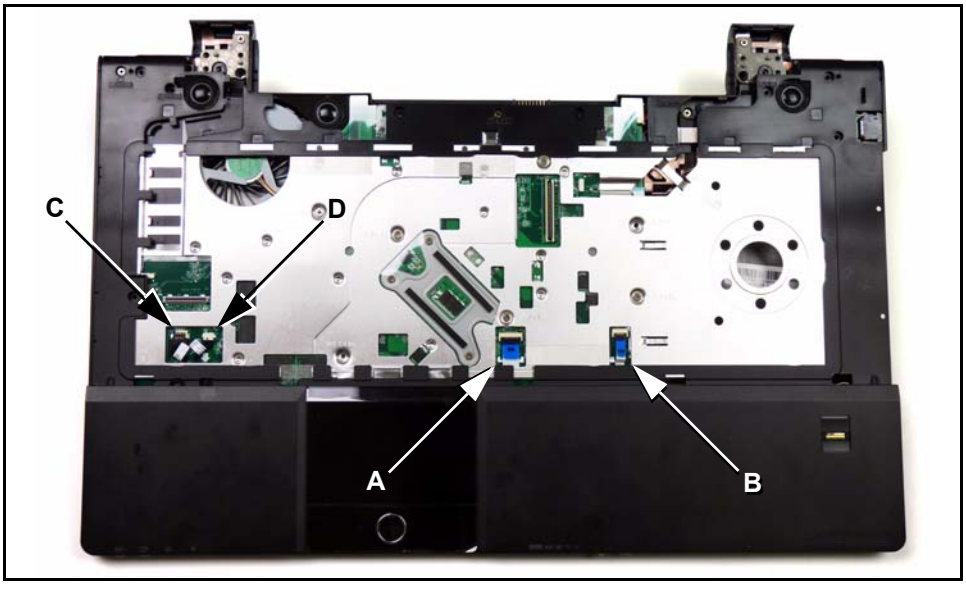

Figure 3-23. Upper Cover Cables

2. Remove five (5) screws (A) (M2.5*6.0-I) and seven (7) screws (B) (M2.5*4.0-I) (B) from upper cover as shown in Figure 3-24.

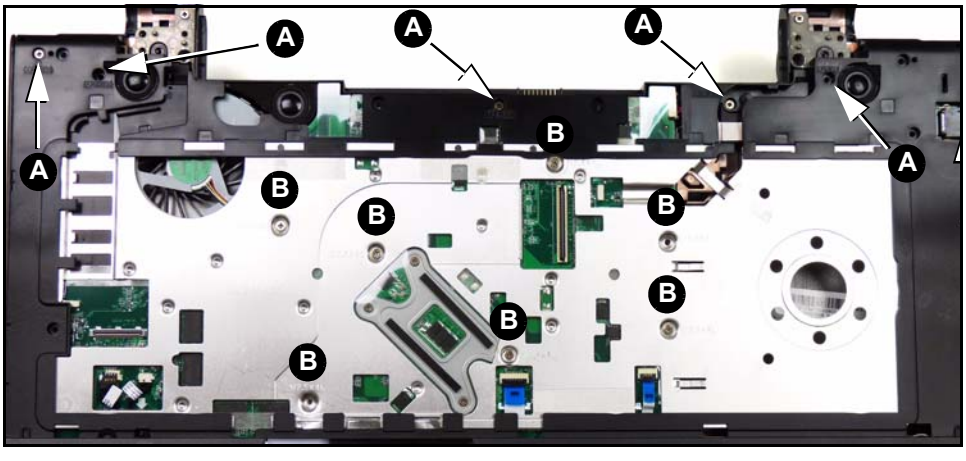

Figure 3-24. Upper Cover Screws

3. Lifting from top edge, remove upper cover from lower cover.

Upper Cover Installation

1. Install upper cover on lower cover.
2. Install and secure five (5) screws (A) (M2.5*6.0-I) and seven (7) screws (B) (M2.5*4.0-I) to upper cover. Refer to Figure 3-24.
3. Connect touchpad module FFC (A), speaker cable (B), Bluetooth cable (C), and microphone cable (D) to mainboard connectors. Refer to Figure 3-23.
4. Install LCD module.

Microphone Module Removal

Prerequisite:

Upper Cover Removal

1. Locate microphone module (A) on upper cover as shown in Figure 3-25.

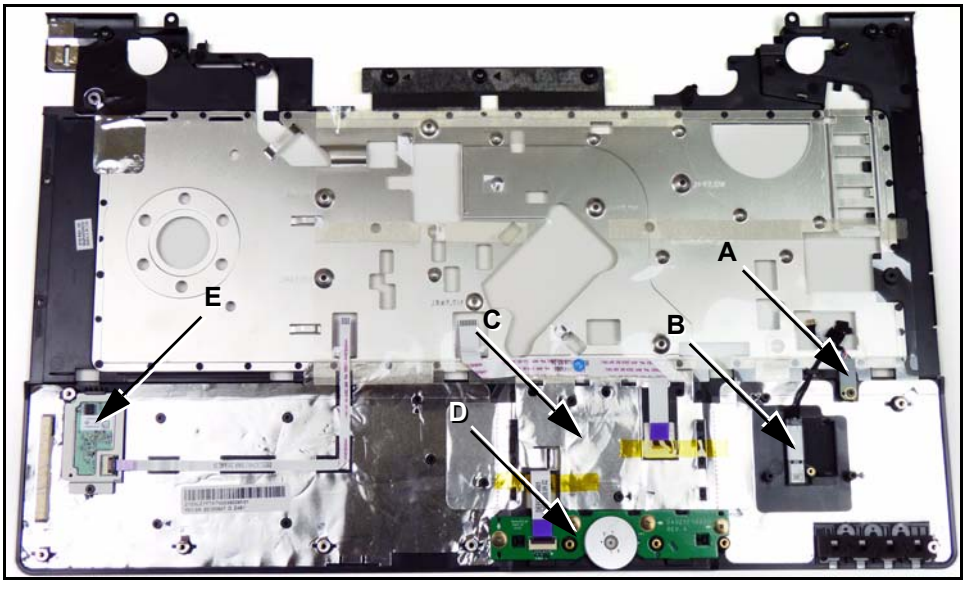

Figure 3-25. Overview of Upper Cover Modules and Cables

2. Remove screw (A) (M2.0*3.0-I) from upper cover as shown in Figure 3-26.
3. Remove microphone module (B) from upper cover.

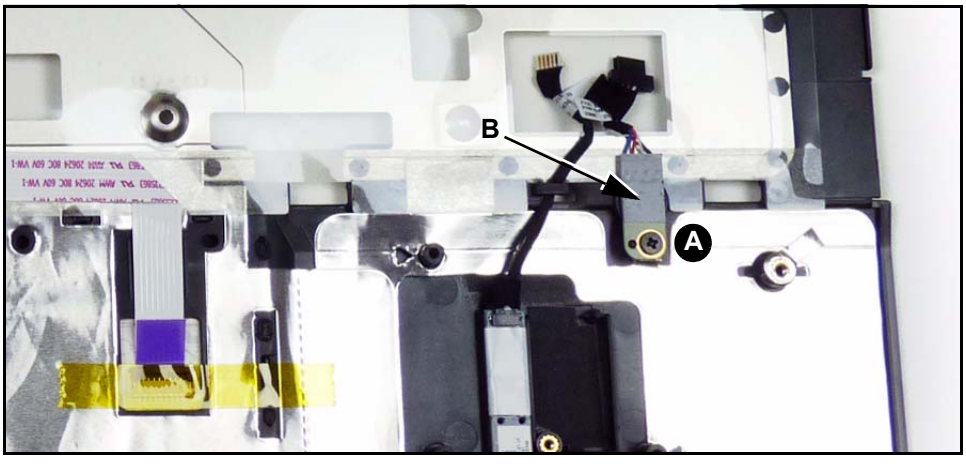

Figure 3-26. Microphone Module

Microphone Module Installation

1. Install microphone module (B). Refer to Figure 3-26.
2. Install and secure screw (A) (M2.0*3.0-I) to upper cover.
3. Install upper cover.

Bluetooth Module Removal

Prerequisite:

Upper Cover Removal

1. Locate Bluetooth module (B) on upper cover. Refer to Figure 3-25.
2. Lift module (A) from adhesive strip on upper cover as shown in Figure 3-27.
3. Disconnect module cable (B) from module (A).

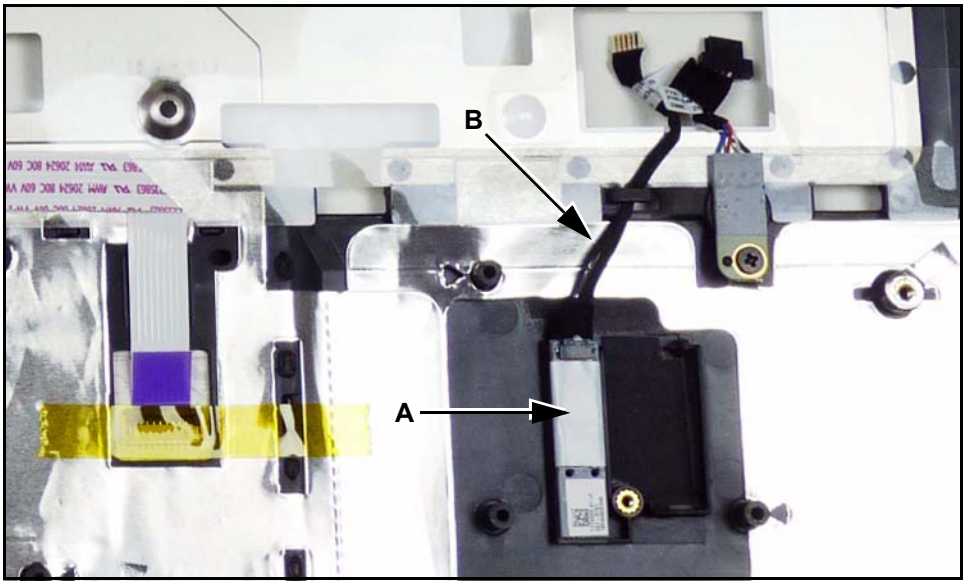

Figure 3-27. Bluetooth Module

Bluetooth Module Installation

1. Connect module cable (B) to module (A). Refer to Figure 3-27.
2. Install and secure module (A) to adhesive strip on upper cover.
3. Install upper cover.

Touchpad Board Removal

Prerequisite:

Upper Cover Removal

NOTE:

If touchpad module malfunctions, replace upper cover.

1. Locate touchpad board (D) and touchpad module (C) on upper cover. Refer to Figure 3-25.
2. Remove adhesive tape from touchpad module connector (A) as shown in Figure 3-28.
3. Disconnect touchpad module FFC (B) from touchpad module connector (A).
4. Remove touchpad module FFC (B) from upper cover.
5. Remove adhesive tape securing board FFC (C) to upper cover.
6. Disconnect board FFC (C) from board connector (D) and touchpad module connector (E).
7. Remove board FFC (C) from upper cover.

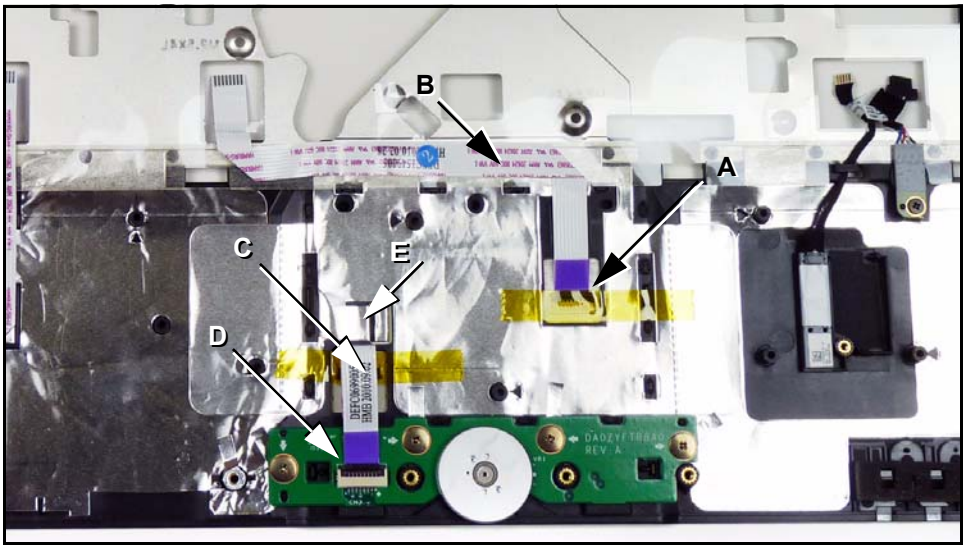

Figure 3-28. Touchpad Board and Module Cables

8. Remove four (4) screws (A) (M2-0.4*2-I) from module as shown in Figure 3-29.
9. Remove board by pivoting it around guide pin (B).

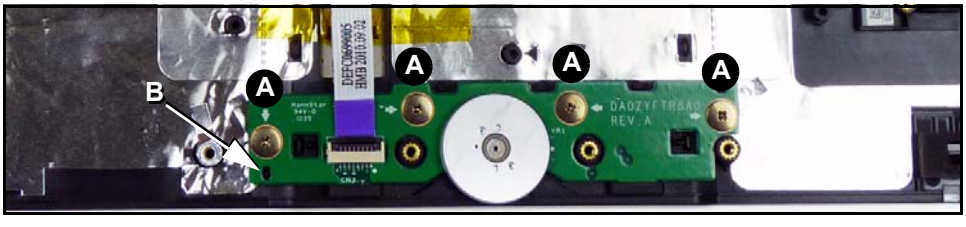

Figure 3-29. Touchpad Board Screws

Touchpad Board Installation

1. Install board by pivoting it around guide pin (B). Refer to Figure 3-29.
2. Install and secure four (4) screws (A) (M2-0.4*2-I) to upper cover.
3. Install board FFC (C) to upper cover. Refer to Figure 3-28.
4. Connect board FFC (C) to board connector (D) and touchpad module connector (E).
5. Secure board FFC (C) to upper cover with adhesive tape.
6. Install touchpad module FFC (B) on upper cover.
7. Connect touchpad module FFC (B) to touchpad module connector (A).
8. Secure touchpad module FFC (B) with adhesive tape to touchpad module connector (A).
9. Install upper cover.

Fingerprint Module Removal

Prerequisite:

Upper Cover Removal

1. Locate fingerprint module (E) on upper cover. Refer to Figure 3-25.
2. Disconnect module FFC (A) from module connector (B) as shown in Figure 3-30.
3. Remove module FFC (A) from upper cover.
4. Remove screw (C) (M2.0*3.0-I) from upper cover.
5. Remove module bracket (D) from upper cover.
6. Remove module from upper cover.

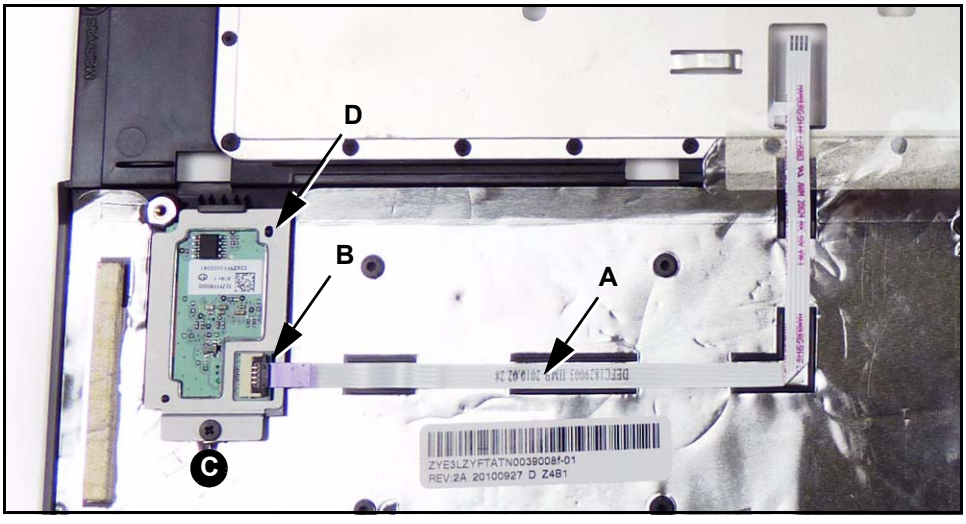

Figure 3-30. Fingerprint Module

Finger Print Module Installation

1. Install module on upper cover.
2. Install module bracket (D) and align with screw hole. Refer to Figure 3-30.
3. Install and secure screw (C) (M2.0*3.0-I) to upper cover.
4. Install module FFC (A) on upper cover.
5. Connect module FFC (A) to module connector (B).
6. Install upper cover.

LAN Module Removal

Prerequisite:

Upper Cover Removal

1. Locate LAN module (A) on lower cover as shown on Figure 3-31.

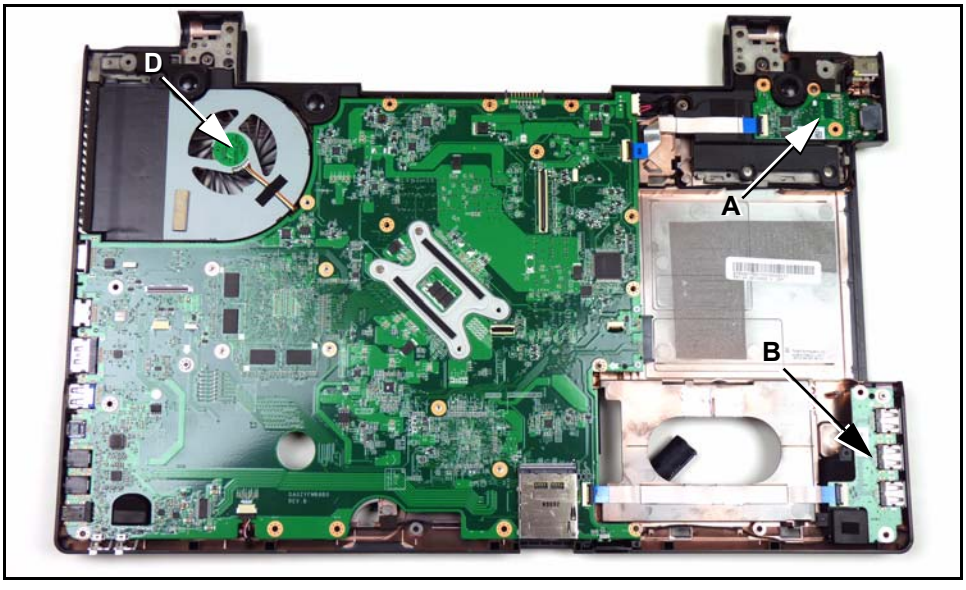

Figure 3-31. Lower Cover with Modules

2. Disconnect module FFC (A) from module connector (B) as shown in Figure 3-32.
3. Disconnect module FFC (A) from mainboard connector (C).

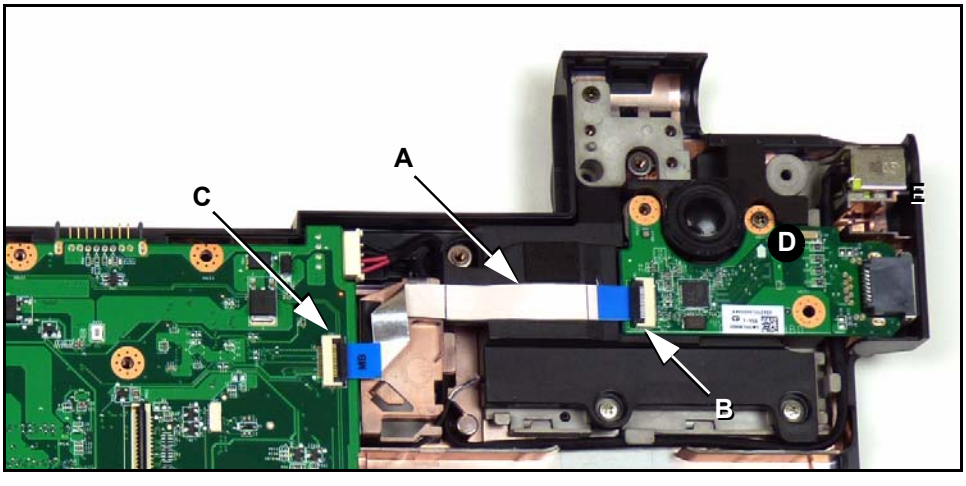

Figure 3-32. LAN Module

NOTE:

The LAN module FFC is part of the lower cover FRU (Field Replacement Unit) component. Do not remove it.

4. Remove screw (D) (M2.5*6.0-I) from lower cover.
5. Remove module from lower cover.

LAN Module Installation

1. Install module (A) on lower cover. Refer to Figure 3-31.
2. Install and secure screw (D) (M2.5*6.0-I) to lower cover. Refer to Figure 3-32.
3. Connect module FFC (A) to mainboard connector (C).
4. Connect module FFC (A) to module connector (B).
5. Install upper cover.

USB Module Removal

Prerequisite:

Upper Cover Removal

1. Locate USB module (B) on lower cover as shown on Figure 3-31.
2. Disconnect module FFC (A) from module connector (B). Refer to Figure 3-33.
3. Disconnect module FFC (A) from mainboard connector (C).

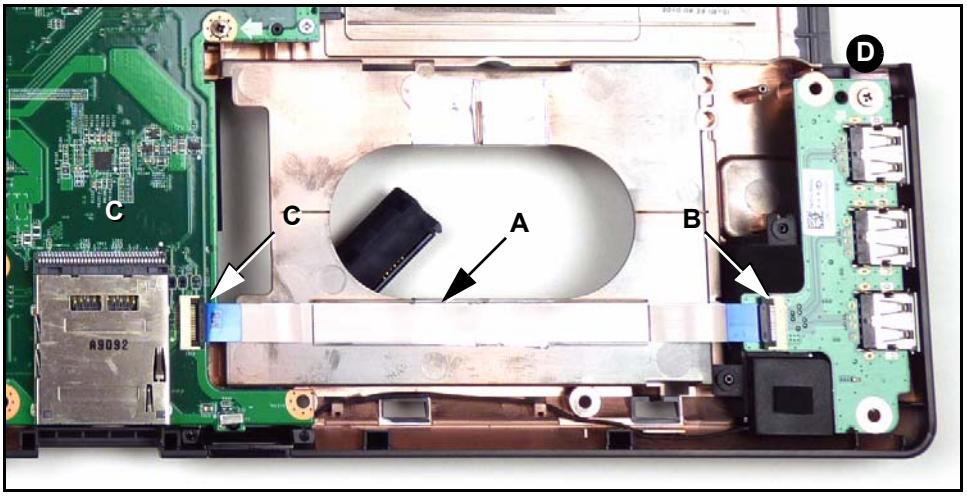

Figure 3-33. USB Module

NOTE:

The USB module FFC is part of the lower cover FRU (Field Replacement Unit) component. Do not remove it.

4. Remove screw (D) (M2.5*6.0-I) from lower cover.
5. Remove module from lower cover.

USB Module Installation

1. Install module (B) on lower cover. Refer to Figure 3-31.
2. Connect module FFC (A) to module connector (B). Refer to Figure 3-33.
3. Connect module FFC (A) to mainboard connector (C).
4. Install and secure screw (D) (M2.5*6.0-I) to lower cover.
5. Install upper cover.

Mainboard Removal

Prerequisite:

Upper Cover Removal

1. Locate mainboard on lower cover as shown in Figure 3-34.
2. Disconnect DC-in cable from mainboard connector (A).
3. Disconnect speaker cable from mainboard connector (B).
4. Disconnect LAN module FFC from mainboard connector (C).
5. Disconnect USB module FFC from mainboard connector (D).

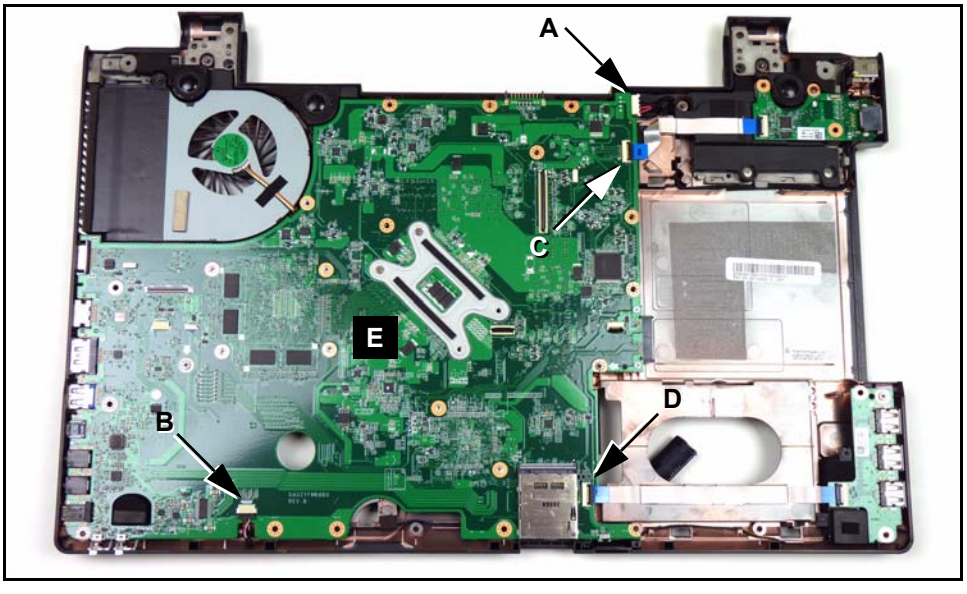

Figure 3-34. Mainboard Connectors (Top)

6. Flip mainboard over as shown in Figure 3-35.
7. Disconnect cable from mainboard connector (A).

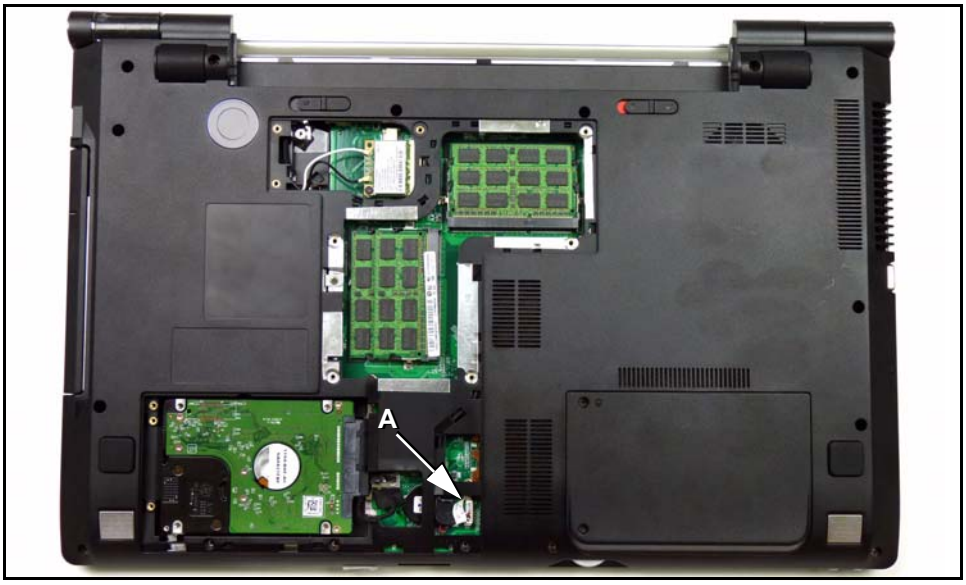

Figure 3-35. Mainboard Connectors (Bottom)

8. Flip mainboard over as shown in Figure 3-36.
9. Remove two (2) screws (A) (M2.5*6.0-I) from lower cover.

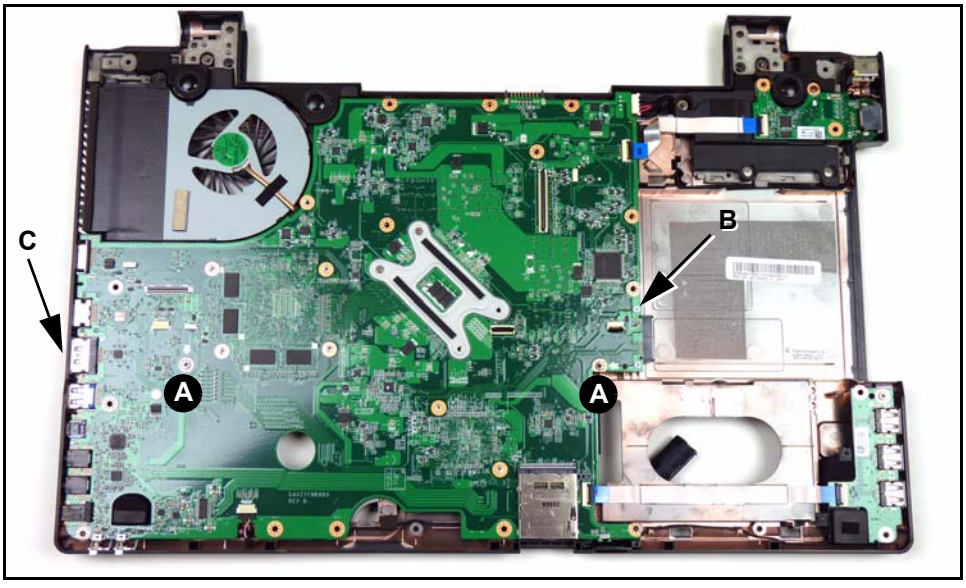

Figure 3-36. Mainboard in Lower Cover

NOTE:

Connectors on left side of mainboard (i.e. USB 3.0, HDMI, etc.) are set in lower cover slots. Do not force mainboard when trying to remove it.

10. Lift right side (B) of mainboard until edge is a few cm above lower cover.

11. Remove mainboard by pulling away from left side (C) of lower cover.

Mainboard Installation

1. Install mainboard by sliding left side at a slight angle into slots on left side (C) of lower cover. Refer to Figure 3-36.

NOTE:

Connectors on left side of mainboard (i.e. USB 3.0, HDMI, etc.) are set in lower cover slots. Do not force mainboard when trying to install it.

2. Lower right side (B) of mainboard until edge is flush with lower cover.
3. Install and secure two (2) screws (A) (M2.5*6.0-I) to lower cover.
4. Flip lower cover over as shown in Figure 3-35.
5. Connect cable to mainboard connector (A).
6. Flip lower cover over as shown in Figure 3-34.
7. Connect USB module FFC to mainboard connector (D).
8. Connect LAN module FFC to mainboard connector (C).
9. Connect speaker cable to mainboard connector (B).
10. Connect DC-in cable to mainboard connector (A).
11. Install upper cover.

Speaker and Subwoofer Assembly Removal

Prerequisite:

Mainboard Removal

1. Locate speaker and subwoofer assembly (A and B) on the lower cover as shown in Figure 3-37.

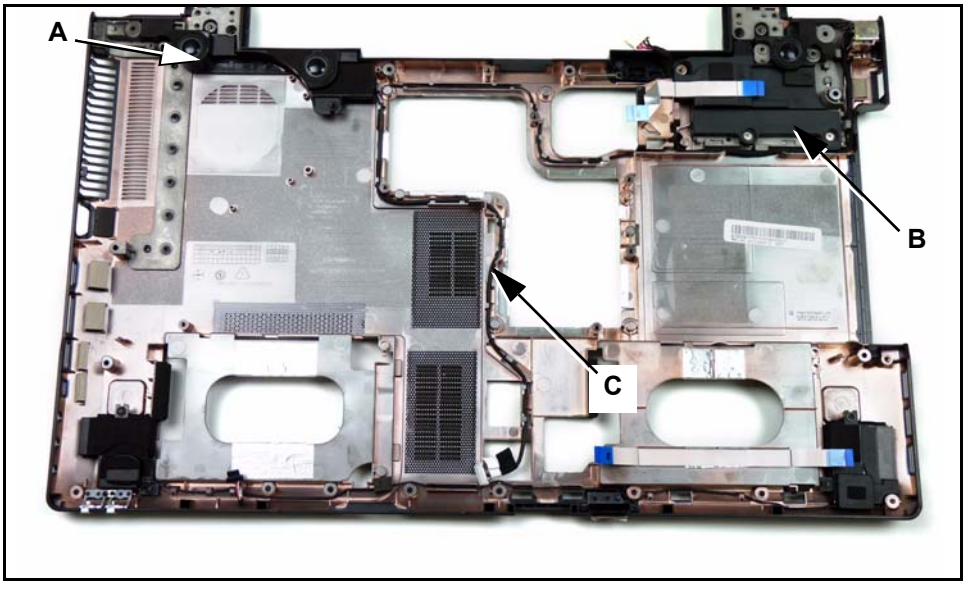

Figure 3-37. Speaker and Subwoofer Overview

2. Remove the speaker to mainboard cables (C) located on the lower cover. Figure 3-37.
3. Remove the speakers (L/R) and the subwoofer assembly.

Speaker and Subwoofer Assembly Installation

1. Install the speaker and subwoofer assembly (A and B) on the lower cover. Refer to Figure 3-37.
2. Install the speaker cabling along the lower cover (C). Refer to Figure 3-37.
3. Install Mainboard.

RTC Battery Removal

Prerequisite:

Mainboard Removal

1. Locate RTC battery (A) on mainboard as shown in Figure 3-38.

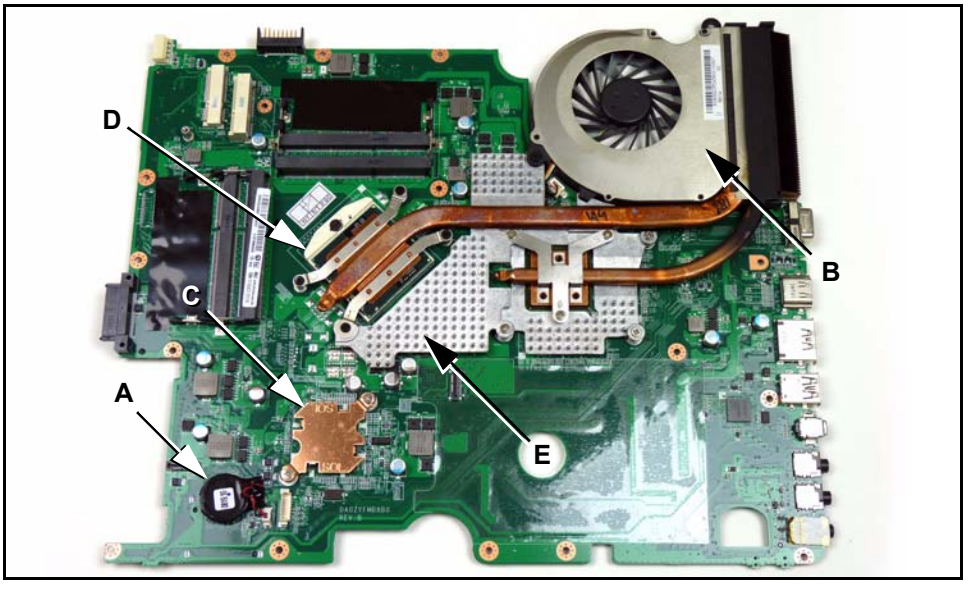

Figure 3-38. Mainboard (bottom) Overview

2. Disconnect RTC battery cable from mainboard connector (A) as shown in Figure 3-39.
3. Remove RTC battery from mainboard.

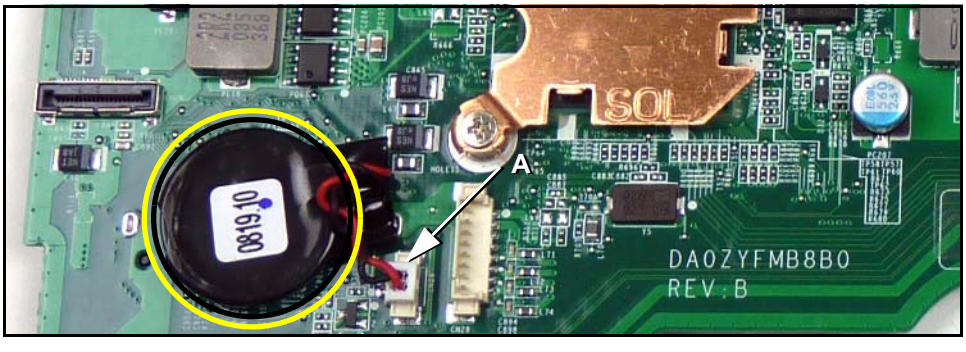

Figure 3-39. RTC Battery

+ IMPORTANT:

Follow local regulations for battery (Figure 3-39) disposal.

RTC Battery Installation

1. Install RTC battery (A) on mainboard. Refer to Figure 3-38.
2. Connect RTC battery cable to mainboard connector (A). Refer to Figure 3-39.
3. Install mainboard.

Thermal Module Removal

Prerequisite:

Mainboard Removal

1. Locate thermal module (B) and heatsink (E) on mainboard. Refer to Figure 3-38.
2. Disconnect module cable from mainboard connector (A) as shown in Figure 3-40.
3. Loosen four (4) captive screws (B).
4. Remove four (4) non-captive screws (C) (M2.5*4.0-I) from mainboard in numerical order from five (5) to eight (8).
5. Remove three (3) non-captive screws (D) (M2.5*4.0-I) from mainboard.

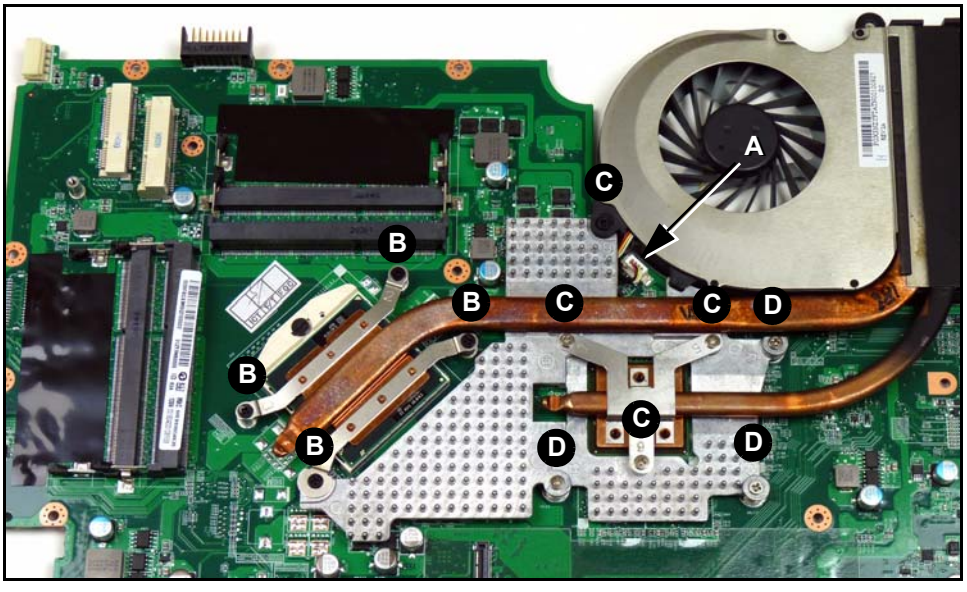

Figure 3-40. Thermal Module

6. Remove thermal module and heatsink from mainboard.

Thermal Module Installation

+ IMPORTANT:

Apply suitable thermal grease and ensure all heat pads are in place before replacing module.

⚠ CAUTION:

Make sure thermal grease does not spill on mainboard because it may cause damage.

The following thermal grease types are approved for use:

- Silmore GP50
- Honeywell
- Jet Motor 7762

The following thermal pads are approved for use:

- Eapus XR-PE

1. Remove all traces of thermal grease from CPU using a lint-free cloth or cotton swab and Isopropyl Alcohol, Acetone, or other approved cleaning agent.
2. Apply small amount of thermal grease to center of CPU (A) as shown in Figure 3-41.

⇛ NOTE:

Force used during installation of thermal module is sufficient to spread grease over CPU top.

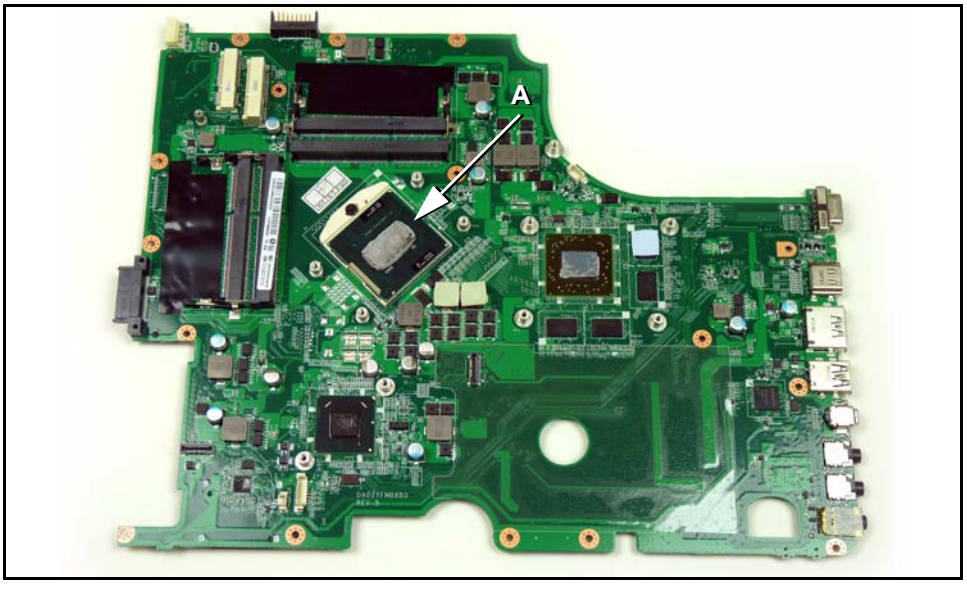

Figure 3-41. Applying Grease to CPU

3. Align module and heatsink to mainboard screw holes.

⇛ NOTE:

Keep module level to spread grease evenly.

4. Install and secure four (4) non-captive screws (C) (M2.5*4.0-I) in reverse numerical order from five (5) to eight (8) to mainboard. Refer to Figure 3-39.
5. Install and secure three (3) non-captive screws (D) (M2.5*4.0-I) to mainboard.
6. Secure four (4) captive screws (B).
7. Connect module cable to mainboard connector (A).
8. Install mainboard.

CPU Removal

Prerequisite:

Thermal Module Removal

1. Locate CPU module (D) on mainboard. Refer to Figure 3-38.
1. Turn captive screw (A) left 180º as shown in Figure 3-42.
2. Remove CPU from socket.

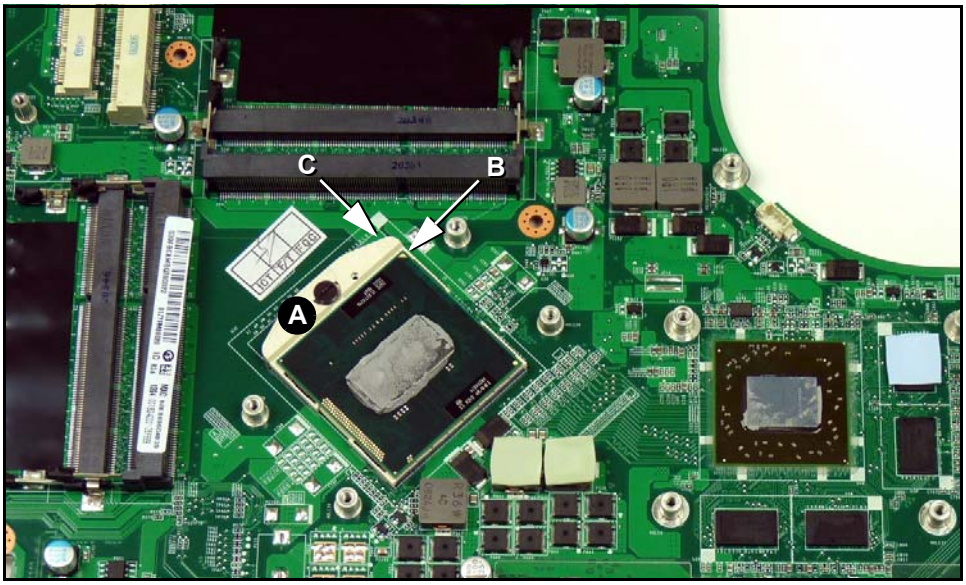

Figure 3-42. CPU in Socket

CPU Installation

1. Align CPU marker (B) with socket marker (C) and install CPU in socket. Refer to Figure 3-42.
2. Turn screw (A) right 180º.
3. Install thermal module.

PCH Heatsink Removal

Prerequisite:

Mainboard Removal

1. Locate PCH heatsink (C) on mainboard. Refer to Figure 3-38.
2. Loosen two (2) captive screws (A) as shown in Figure 3-43.
3. Remove PCH heatsink from mainboard.

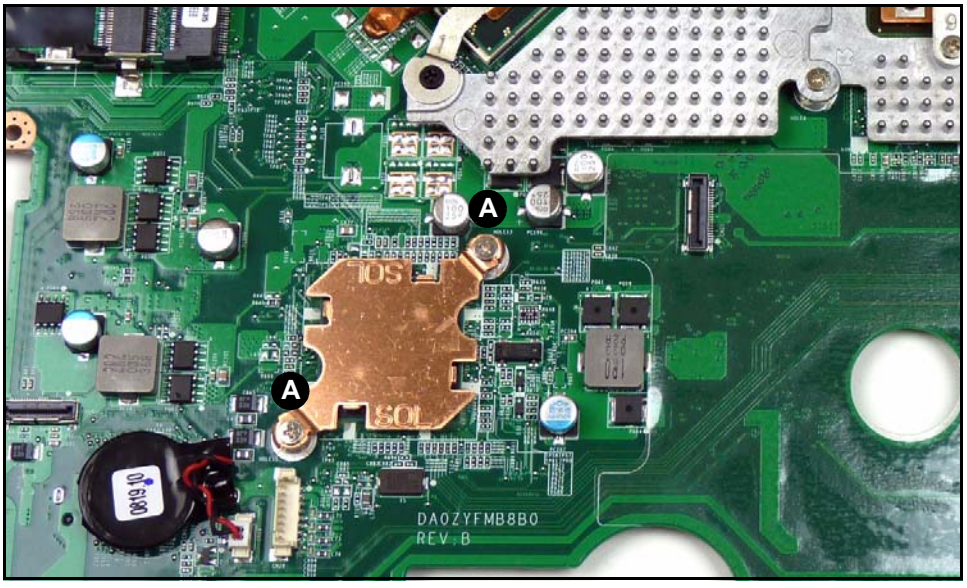

Figure 3-43. PCH Heatsink

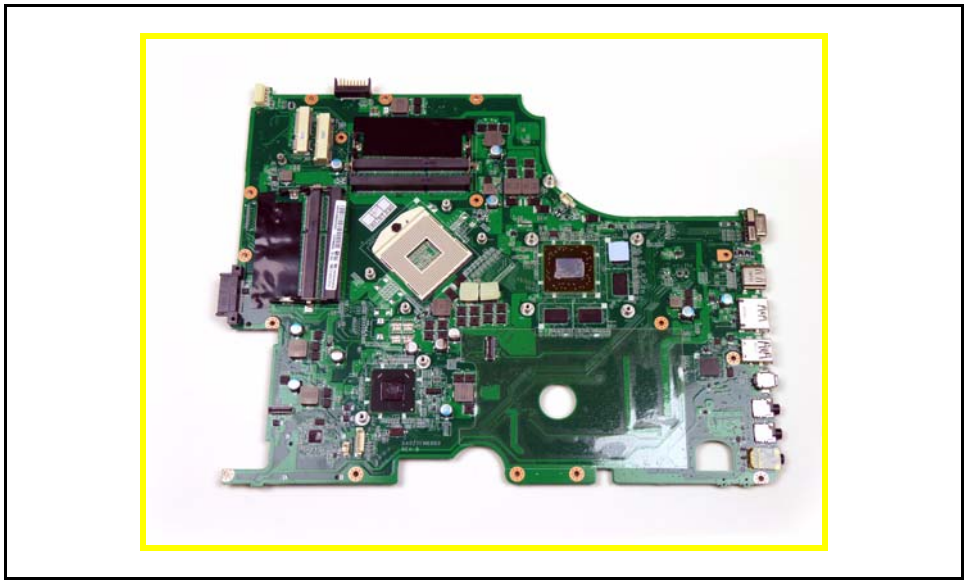

Figure 3-44. Mainboard Recycling

+ IMPORTANT:

Circuit boards >10 cm² must be recycled. Follow local regulations for disposal.

PCH Heatsink Installation

1. Install PCH heatsink (C) on mainboard. Refer to Figure 3-38.
2. Secure two (2) captive screws (A) to mainboard. Refer to Figure 3-43.
3. Install mainboard.

LCD Module Removal and Installation Instructions

The LCD module must be disassembled in a clean room environment. Disassembly outside of a clean room environment can allow foreign object matter to enter the sealed area between the LCD panel and glass cover. If a clean room is not available, contact the manufacturer to have the module disassembled and repaired.

CHAPTER 4
Troubleshooting

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Troubleshooting

Introduction

This chapter contains information about troubleshooting common problems associated with the notebook.

General Information

The following procedures are a guide for troubleshooting computer problems. The step by step procedures are designed to be performed as described.

NOTE:

The diagnostic tests are intended for Acer products only. Non-Acer products, prototype cards, or modified options can give false errors and invalid system responses.

1. Obtain as much detailed information as possible about the problem.
2. If possible, verify the symptoms by re-creating the failure through diagnostic tests or repeating the operation that led to the problem.
3. Use Table 4-1 with the verified symptom to determine the solution.

Table 4-1. Common Problems

Symptoms (Verified)
Power On Issues
No Display Issues
LCD Failure
Keyboard Failure
Touchpad Failure
Internal Speaker Failure
Microphone Failure
USB Failure
Other Functions Failure
Intermittent Problems
Undetermined Problems

4. If the Issue is still not resolved, refer to *Online Support Information*.

Power On Issues

If the system does not power on, perform the following, one at a time, to correct the problem. Do not replace a non-defective FRU:

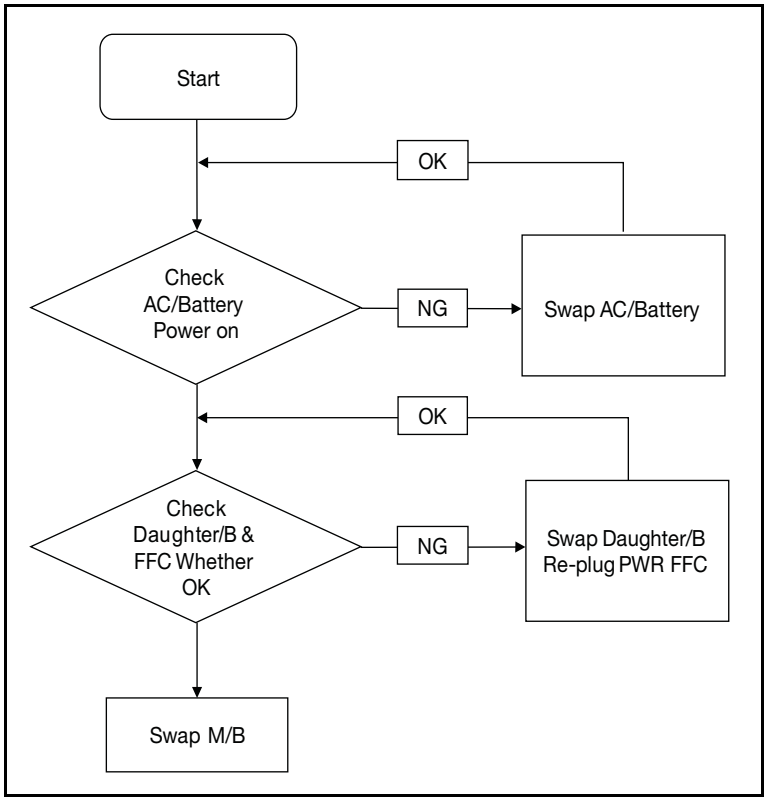

Figure 4-1. Power On Issue

Computer Shuts Down Intermittently

If the system powers off at intervals, perform the following.

1. Makes sure the power cable is properly connected to the computer and the electrical outlet.
2. Remove all extension cables between the computer and the outlet.
3. Remove all surge protectors between the computer and the electrical outlet. Plug the computer directly into a known serviceable electrical outlet.
4. Disconnect the power and open the casing to check the thermal unit and fan airways are free of obstructions.
5. Remove all external and non-essential hardware connected to the computer that are not necessary to boot the computer to the failure point.
6. Remove any recently installed software.
7. If the Issue is still not resolved, refer to *Online Support Information*.

No Display Issues

If the Display does not work, perform the following, one at a time. Do not replace a non-defective FRU:

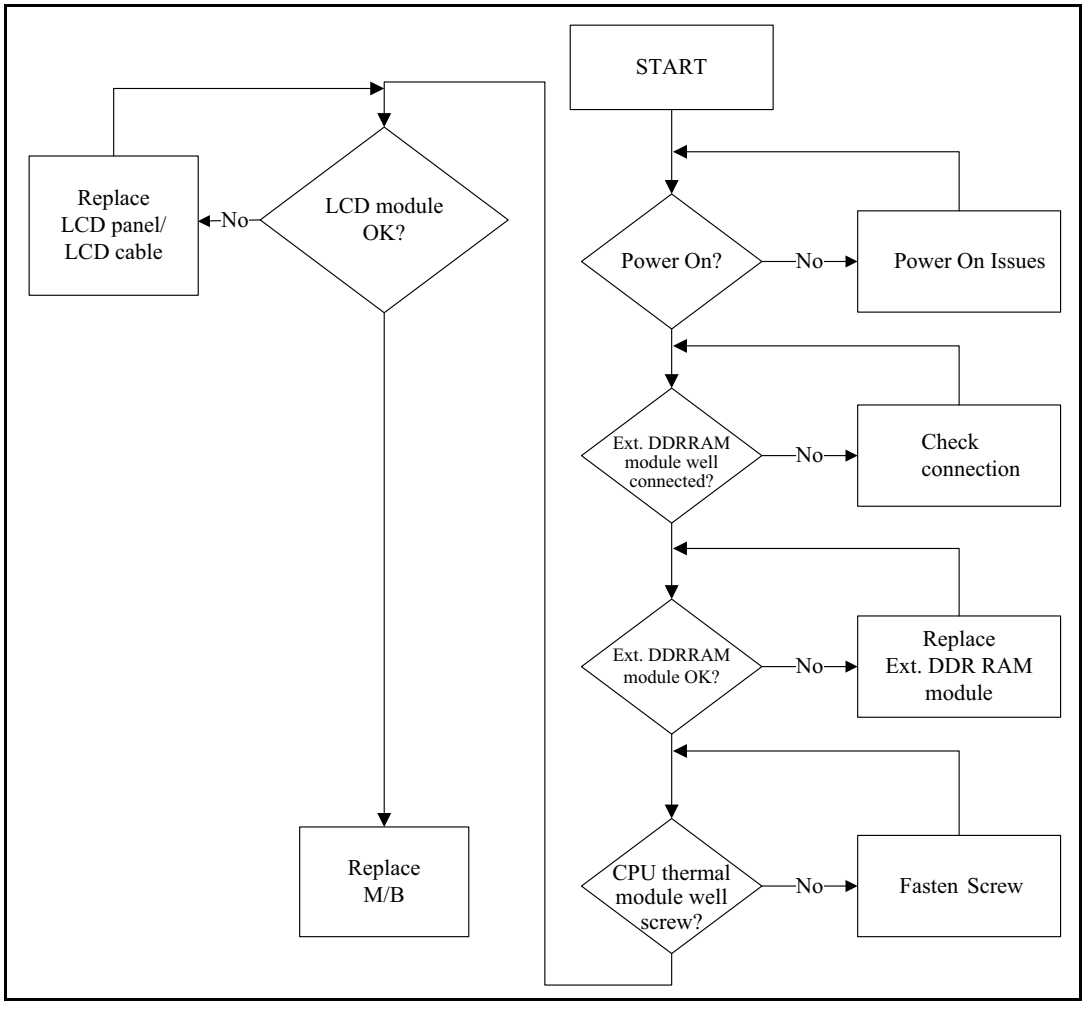

Figure 4-2. No Display Issue

No POST or Video

If the POST or video does not appear, perform the following, one at a time.

1. Make sure that internal display is selected. Switching between internal and external by pressing ***Fn+F5***. Reference product pages for specific model procedures.
2. Make sure the computer has power by checking for one of the following:
   - Fans start up
   - Status LEDs illuminate

If no power, refer to *Power On Issues*.

3. Drain stored power by removing the power cable and battery. Hold the power button for 10

seconds.

4. Connect the power and reboot the computer.
5. Connect an external monitor to the computer and switch between the internal display and the external display is by pressing ***Fn+F5***.
6. If the POST or video appears on the external display only, refer to *LCD Failure*.
7. Disconnect power and all external devices including port replicators or docking stations. Remove any memory cards and CD/DVD discs.
8. Start the computer. If the computer boots correctly, add the devices one by one until the failure point is discovered.
9. Reseat the memory modules.
10. Remove the drives (refer to *Maintenance Flowchart*).
11. If the Issue is still not resolved, refer to *Online Support Information*.

Abnormal Video

If the video appears abnormal, perform the following, one at a time.

1. Boot the computer.
   - If permanent vertical/horizontal lines or dark spots appear in the same location, the LCD is faulty and should be replaced. Refer to Disassembly Process.
   - If extensive pixel damage is present (different colored spots in the same locations on the screen), the LCD is faulty and should be replaced. Refer to *Maintenance Flowchart*.

NOTE:

Make sure that the computer is not running on battery alone as this may reduce display brightness.

2. Adjust the brightness to its highest level. Refer to the User Manual for instructions on adjusting the settings. If the display is too dim at the highest brightness setting, the LCD is faulty and should be replaced. Refer to *Disassembly Process*.
3. Check the display resolution is correctly configured:
   - Minimize or close all Windows.
   - If display size is only abnormal in an application, check the view settings and control/mouse wheel zoom feature in the application.
   - If desktop display resolution is not normal, right-click on the desktop and select `Personalize Display Settings`.
   - Click and drag the Resolution slider to the desired resolution.
   - Click ***Apply*** and check the display. Readjust if necessary.
4. Roll back the video driver to the previous version if updated.
5. Remove and reinstall the video driver.
6. Check the Device Manager to determine that:
   - The device is properly installed. There are no red Xs or yellow exclamation marks
   - There are no device conflicts
   - No hardware is listed under `Other Devices`
7. If the Issue is still not resolved, refer to *Online Support Information*.
8. Run the *Windows Memory Diagnostic* from the operating system DVD and follow the on-screen prompts.
9. If the issue is still not resolved, refer to *Online Support Information*.

LCD Failure

If the LCD fails, perform the following, one at a time. Do not replace a non-defective FRU:

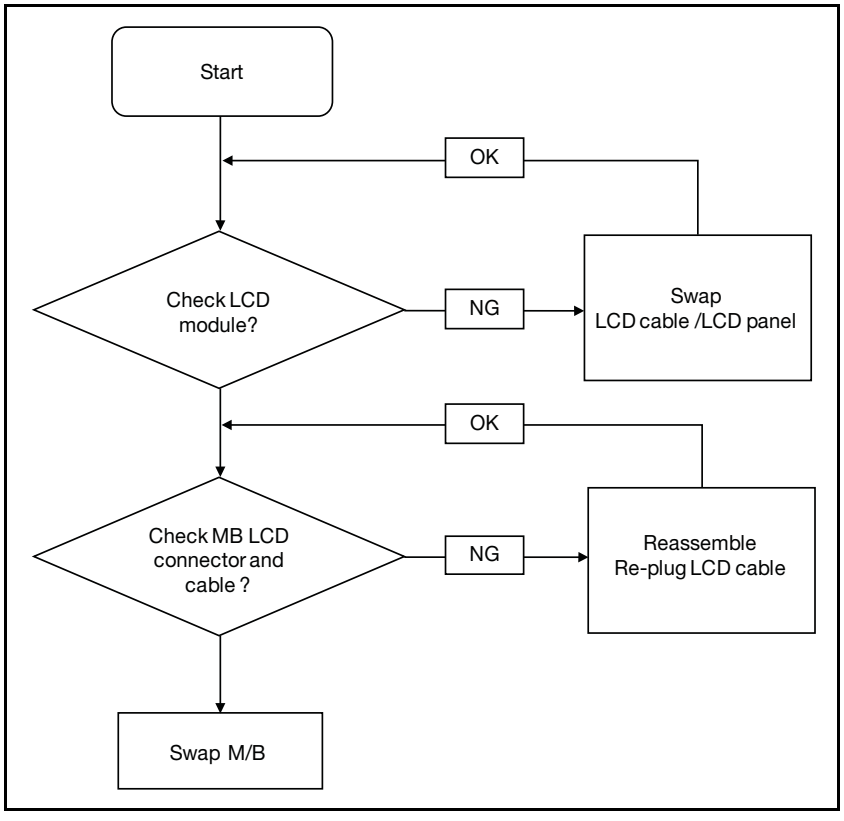

Figure 4-3. LCD Failure

Keyboard Failure

If the Keyboard fails, perform the following, one at a time. Do not replace a non-defective FRU:

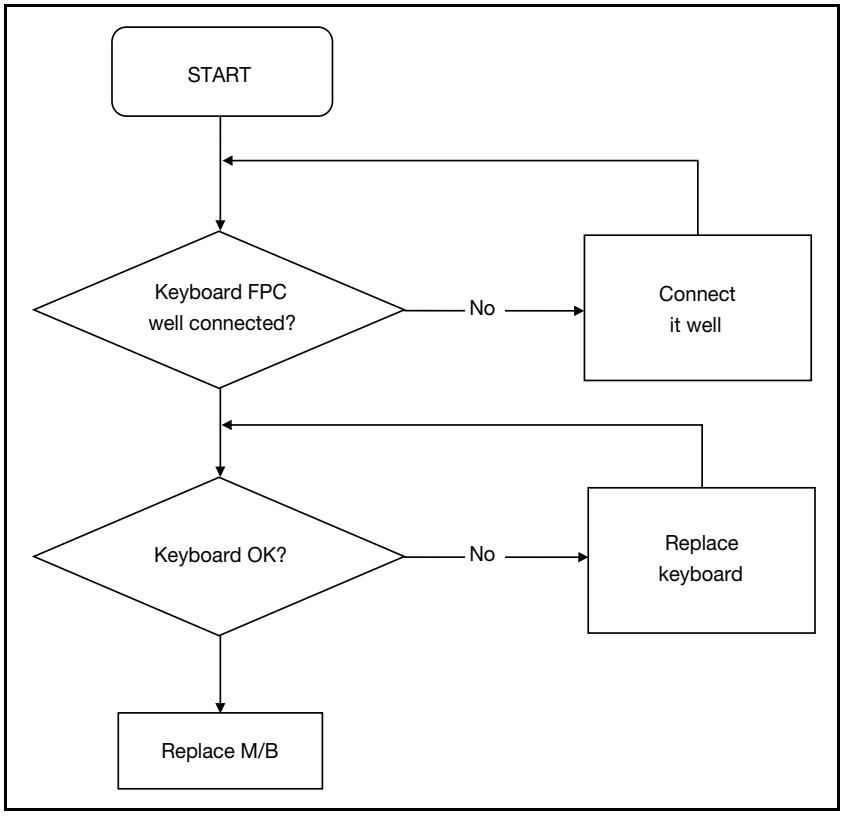

Figure 4-4. Keyboard Failure

Touchpad Failure

If the Touchpad fails, perform the following, one at a time. Do not replace a non-defective FRU:

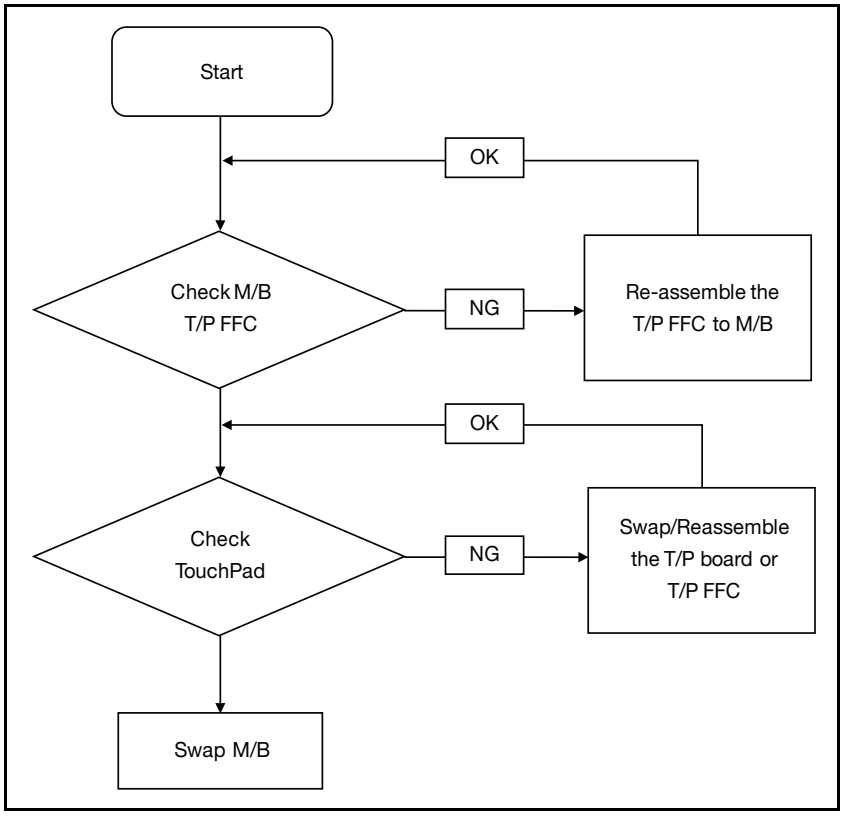

Figure 4-5. Touchpad Failure

Internal Speaker Failure

If internal Speakers fail, perform the following, one at a time. Do not replace a non-defective FRU:

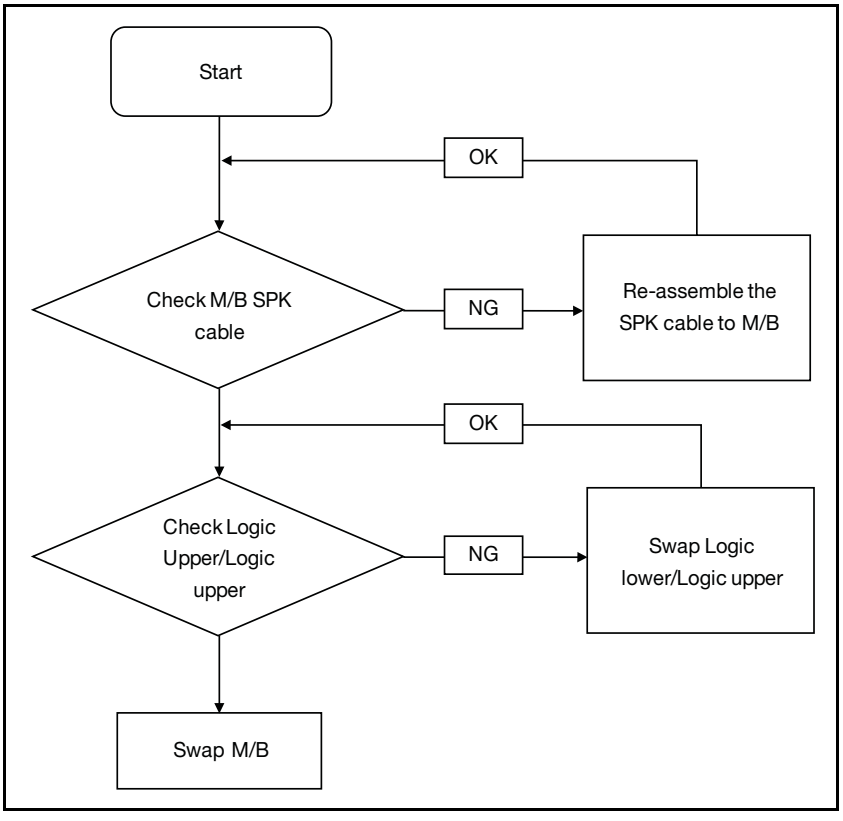

Figure 4-6. Internal Speaker Failure

Sound Problems

Perform the following, one at a time.

1. Boot the computer.
2. Navigate to ***Start*** → ***Control Panel*** → ***System and Maintenance*** → ***System*** → ***Device Manager***. Check the Device Manager to determine that:
   - The device is properly installed
   - There are no red Xs or yellow exclamation marks
   - There are no device conflicts
   - No hardware is listed under Other Devices
3. If updated recently, roll back the audio driver to the previous version.
4. Remove and reinstall the audio driver.
5. Make sure that all volume controls are set mid range:
   - Click the volume icon on the taskbar
   - Drag the slider to 50. Confirm that the volume is not muted.

- Click Mixer to verify that other audio applications are set to 50 and not muted.

6. Navigate to ***Start*** → ***Control Panel*** → ***Hardware and Sound*** → ***Sound***. Confirm that Speakers are selected as the default audio device (green check mark).

NOTE:

If Speakers does not show, right-click on the `Playback` tab and select **Show `Disabled Devices`** (clear by default).

7. Select Speakers and click ***Configure*** to start `Speaker Setup`. Follow the on-screen prompts to configure the speakers.
8. Remove any recently installed hardware or software.
9. Restore system and file settings from a known good date using `System Restore`.
10. If the issue is remains, repeat step 9, selecting an earlier time and date.
11. Reinstall the operating system.
12. If the issue is still not resolved, refer to *Online Support Information*.

Microphone Failure

If internal or external Microphones fail, perform the following, one at a time.

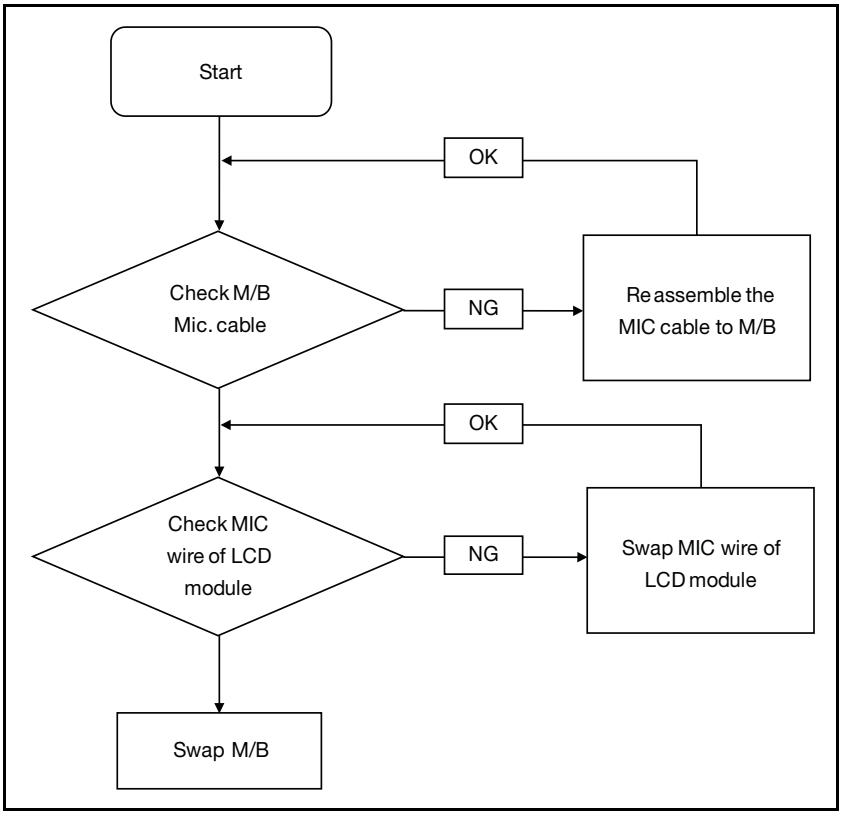

Figure 4-7. Microphone Failure

1. Check that the microphone is enabled. Navigate to ***Start*** → ***Control Panel*** → ***Hardware and Sound*** → ***Sound*** and select the `Recording` tab.
2. Right click on the `Recording` tab and select `Show Disabled Devices` (clear by default). The microphone appears on the `Recording` tab.
3. Right click on the microphone and select ***Enable***.
4. Select the microphone then click ***Properties***. Select the ***Levels*** tab.
5. Increase the volume to the maximum setting and click ***OK***.
6. Test the microphone hardware:
   - Select the microphone and click ***Configure***.
   - Select ***Set up microphone***.
   - Select the microphone type from the list and click ***Next***.
   - Follow the on-screen prompts to complete the test.
7. If the Issue is still not resolved, refer to *Online Support Information*.

USB Failure

If the USB fails, perform the following, one at a time. Do not replace a non-defective FRU:

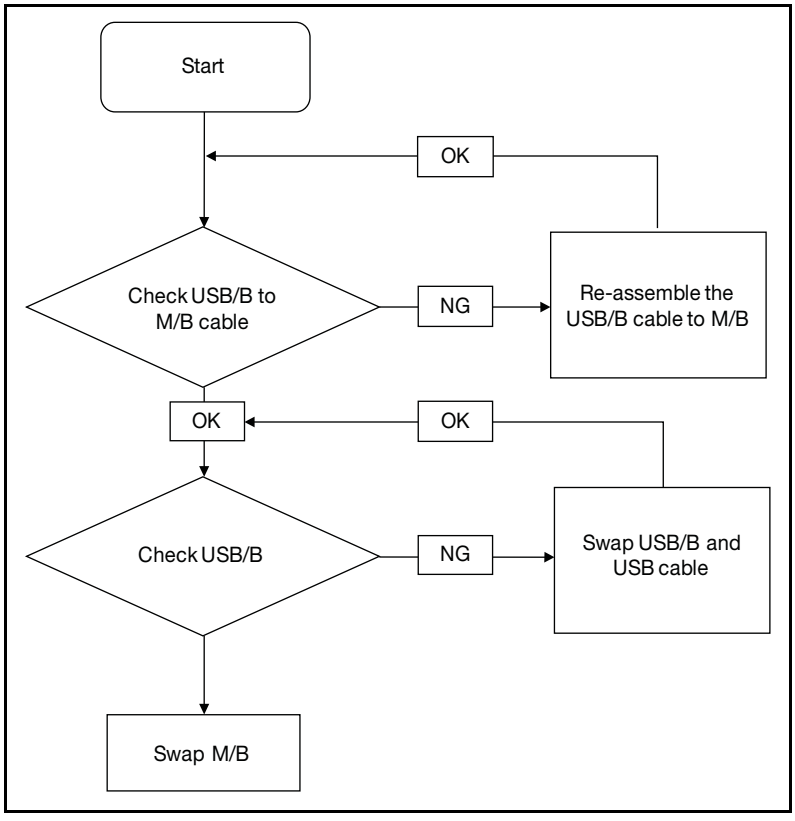

Figure 4-8. USB Failure

Other Functions Failure

1. Check if drives are functioning correctly.
2. Check if external modules are functioning correctly.
3. Change mainboard to check if current one is defective.

Intermittent Problems

Intermittent system hang problems can be caused by a variety of reasons that have nothing to do with a hardware defect, such as: cosmic radiation, electrostatic discharge, or software errors. FRU replacement should be considered only when a recurring problem exists.

When analyzing an intermittent problem, perform the following:

1. Run the advanced diagnostic test for the system board in loop mode at least 10 times.
2. If no error is detected, do not replace any FRU.
3. If an error is detected, replace the FRU. Rerun the test to verify that there are no more errors.

Undetermined Problems

The diagnostic problems do not identify which adapter or device failed, which installed devices are incorrect, whether a short circuit is suspected, or whether the system is inoperative.

Perform the following procedures to isolate the failing FRU (do not isolate non-defective FRU).

NOTE:
Verify that all attached devices are supported by the computer.

NOTE:
Verify that the power supply being used at the time of the failure is operating correctly. (Refer to *Power On Issues*).

1. Remove power from the computer.
2. Visually check components for damage. If any problems are found, replace the FRU.
3. Remove or disconnect all of the following devices:
   - Non-Acer devices
   - Printer, mouse, and other external devices
   - Battery pack
   - Hard disk drive
   - DIMM
   - CD-ROM/Diskette drive Module
   - PC Cards
4. Apply power to the computer.
5. Determine if the problem has changed.
6. If the problem does not recur, connect the removed devices one at a time until failing FRU is found.
7. If the problem remains, replace the following FRUs one at a time. Do not replace a non-defective FRU:
   - System board
   - LCD assembly

Post Codes

The following are the InsydeH2O™ Functionality POST code tables. The components of the POST code table includes: SEC phase, PEI phase, DXE phase, BDS phase, CSM functions, S3 functions and ACPI functions.

Table 4-1. POST Code Range

Phase	POST Code Range
SEC 0x0	1 - 0x0F
PEI 0x7	0 - 0x9F
DXE 0x4	0 - 0x6F
BDS 0x1	0 - 0x3F
SMM 0	xA0 - 0xBF
S3 0	xC0 - 0xCF
ASL	0x51 – 0x55 0xE1 – 0xE4
PostBDS	0xF9 – 0xFE
InsydeH2ODDT™ Reserve	0xD0 – 0xD7
OEM Reserve	0xE8 – 0xEB
Reserved	0xD8 – 0xE0 0xE5 – 0xE7 0xEC – 0xF8

Table 4-2. SEC Phase POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	PostCode	Description
SEC_SYSTEM_POWER_ON SEC		01	CPU power on and switch to Protected mode
SEC_BEFORE_MICROCODE _PATCH	SEC	02	Patching CPU microcode
SEC_AFTER_MICROCODE_P ATCH	SEC	03	Setup Cache as RAM
SEC_ACCESS_CSR*	SEC 04		PCIE MMIO Base Address initial
SEC_GENERIC_MSRINIT*	SEC 05		CPU Generic MSR initialization
SEC_CPU_SPEEDCFG*	SEC	06 Setup	CPU speed
SEC_SETUP_CAR_OK	SEC	07	Cache as RAM test

Table 4-2. SEC Phase POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	PostCode	Description
SEC_FORCE_MAX_RATIO*	SEC	08	Tune CPU frequency ratio to maximum level
SEC_GO_TO_SECSTARTUP	SEC	09	Setup BIOS ROM cache
SEC_GO_TO_PEICORE	SEC	0A	Enter Boot Firmware Volume
* 3rd party relate functions – Platform dependence.			

Table 4-3. PEI Phase POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
PEI_SIO_INIT P	EI	70	Super I/O Initialization
PEI_CPU_REG_INIT P	EI	71	CPU Early Initialization
PEI_CPU_AP_INIT* P	EI	72	Multi-processor Early Initial
PEI_CPU_HT_RESET*	PEI 73		HyperTransport Initialization
PEI_PCIE_MMIO_INIT P	EI	74	PCIE MMIO BAR Initialization
PEI_NB_REG_INIT P	EI	75	North Bridge Early Initialization
PEI_SB_REG_INIT	PEI	76	South Bridge Early Initialization
PEI_PCIE_TRAINING*	PEI 77		PCIE Training
PEI_TPM_INIT P	EI	78	TPM Initialization
PEI_SMBUS_INIT P	EI	79	SMBUS Early Initialization
PEI_PROGRAM_CLOCK_GEN	PEI 7A		Clock Generator Initialization
PEI_IGD_EARLY_INITIAL *	PEI	7B	Internal Graphic device early Initialization
PEI_HECI_INIT*	PEI 7C		HECI Initialization
PEI_WATCHDOG_INIT*	PEI 7D		Watchdog timer Initialization
PEI_MEMORY_INIT P	EI	7E	Memory Initial for Normal boot.
PEI_MEMORY_INIT_FOR_CRISIS	PEI	7F	Memory Initial for Crisis Recovery
PEI_MEMORY_INSTALL PEI		80	Simple Memory test
PEI_TXTPEI*	PEI	81	TXT function early Initialization
PEI_SWITCH_STACK	PEI	82	Start to use Memory
PEI_MEMORY_CALLBACK P	EI	83	Set cache for physical memory
PEI_ENTER_RECOVERY_MODE	PEI 84		Recovery device Initialization

Table 4-3. (Continued)PEI Phase POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
PEI_RECOVERY_MEDIA_FOUND	PEI 8	5	Found Recovery image
PEI_RECOVERY_MEDIA_NOT_FOUND	PEI	86	Recovery image not found
PEI_RECOVERY_LOAD_FILE_DONE	PEI	87	Load Recovery Image completed
PEI_RECOVERY_START_FLASH	PEI	88	Start Flash BIOS with Recovery image
PEI_ENTER_DXEIPL	PEI	89	Loading BIOS image to RAM
PEI_FINDING_DXE_CORE	PEI	8A	Loading DXE core
PEI_GO_TO_DXE_CORE P	EI	8B	Enter DXE core
* 3rd party relate functions – Platform dependence.			

Table 4-4. DXE Phase POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	PostCode	Description
DXE_TCGDXE*	DXE	40	TPM initial in DXE
DXE_SB_SPI_INIT*	DXE 41		South bridge SPI initialization
DXE_CF9_RESET*	DXE	42	Setup Reset service
DXE_SB_SERIAL_GPIO_INIT*	DXE	43	South bridge Serial GPIO initialization
DXE_SMMACCESS*	DXE	44	Setup SMM ACCE SS service
DXE_SIO_INIT*	DXE	46	Super I/O DXE initialization
DXE_LEGACY_REGION*	DXE 47		Setup Legacy Region service
DXE_SB_INIT*	DXE	48	South Bridge Middle initialization
DXE_IDENTIFY_FLASH_DEVICE*	DXE 49		Identify Flash device
DXE_FTW_INIT	DXE	4A	Fault Tolerant Write verification
DXE_VARIABLE_INIT DX	E	4B	Variable Service initialization
DXE_VARIABLE_INIT_FAIL DX	E	4C	Fail to initial Variable Service
DXE_MTC_INIT DX	E	4D	MTC Initial
DXE_CPU_INIT	DXE	4E	CPU Middle Initialization
DXE_MP_CPU_INIT DXE		4F	Multi-processor Middle Initialization

Table 4-4. (Continued)DXE Phase POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	PostCode	Description
DXE_SMBUS_INIT DX	E	50	SMBUS Driver Initialization
DXE_SMART_TIMER_INIT DX	E 51		8259 Initialization
DXE_PCRTC_INIT DX	E	52	RTC Initialization
DXE_SATA_INIT*	DXE	53	SATA Controller early Initialization
DXE_SMM_CONTROLER_INIT*	DXE	54	Setup SMM Control service
DXE_LEGACY_INTERRUPT*	DXE	55	Setup Legacy Interrupt service
DXE_RELOCATE_SMBASE	DXE	56	Relocate SMM BASE
DXE_FIRST_SMI DX	E	57	SMI test
DXE_VTD_INIT*	DXE 58		VTD Initial
DXE_BEFORE_CSM16_INIT DX	E	59	Legacy BIOS Initialization
DXE_AFTER_CSM16_INIT DXE		5A	Legacy interrupt function Initialization
DXE_LOAD_ACPI_TABLE DX	E	5B	ACPI Table Initialization
DXE_SB_DISPATCH*	DXE 5C		Setup SB SMM Dispatcher service
DXE_SB_IOTRAP_INIT*	DXE	5D	Setup SB IOTRAP Service
DXE_SUBCLASS_DRIVER*	DXE	5E	Build AMT Table
DXE_PPM_INIT*	DXE 5F		PPM Initialization
DXE_HECIDRV_INIT*	DXE 60		HECIDRV Initialization
* 3rd party relate functions – Platform dependence.			

Table 4-5. BDS Phase POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
BDS_ENTER_BDS	BDS	10	Enter BDS entry
BDS_INSTALL_HOT KEY	BDS 1	1	Install Hotkey service
BDS_ASF_INIT*	BDS 12		ASF Initialization
BDS_PCI_ENUMERATION_START	BDS 1	3	PCI enumeration
BDS_BEFORE_PCIIO_INSTALL	BDS 14		PCI resource assign complete

Table 4-5. (Continued)BDS Phase POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
BDS_PCI_ENUMERATION_END	BDS 1	5	PCI enumeration complete
BDS_CONNECT_CONSOLE_IN	BDS 16		Keyboard Controller, Keyboard and Mouse initialization
BDS_CONNECT_CONSOLE_OUT	BDS 1	7	Video device initialization
BDS_CONNECT_STD_ERR	BDS 1	8	Error report device initialization
BDS_CONNECT_USB_HC	BDS 19		USB host controller initialization
BDS_CONNECT_USB_BUS	BDS	1A	USB BUS driver initialization
BDS_CONNECT_USB_DEVICE	BDS	1B	USB device driver initialization
BDS_NO_CONSOLE_ACTION	BDS 1C		Console device initial fail
BDS_DISPLAY_LOGO_SYSTEM_INFO	BDS	1D	Display logo or system information
BDS_START_IDE_CONTROLLER	BDS 1E		IDE controller initialization
BDS_START_SATA_CONTROLLER	BDS 1F		SATA controller initialization
BDS_START_ISA_ACPI_CONTROLLER	BDS 20		SIO controller initialization
BDS_START_ISA_BUS	BDS 21		ISA BUS driver initialization
BDS_START_ISA_FDD	BDS 2	2	Floppy device initialization
BDS_START_ISA_SEIRAL	BDS 23		Serial device initialization
BDS_START_IDE_BUS	BDS 24		IDE device initialization
BDS_START_AHCI_BUS	BDS 25		AHCI device initialization
BDS_CONNECT_LEGACY_ROM	BDS 26		Dispatch option ROMs

Table 4-5. (Continued)BDS Phase POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
BDS_ENUMERATE_ ALL_BOOT_OPTION	BDS 27		Get boot device information
BDS_END_OF_BOO T_SELECTION	BDS	28	End of boot selection
BDS_ENTER_SETUP	BDS	29	Enter Setup Menu
BDS_ENTER_BOOT _MANAGER	BDS	2A	Enter Boot manager
BDS_BOOT_DEVICE _SELECT	BDS	2B	Try to boot system to OS
BDS_EFI64_SHADO W_ALL_LEGACY_R O M	BDS	2C	Shadow Misc Option ROM
BDS_ACPI_S3SAVE	BDS	2D	Save S3 resume required data in RAM
BDS_READY_TO_B OOT_EVENT	BDS 2E		Last Chipset initial before boot to OS
BDS_GO_LEGACY_ BOOT	BDS	2F	Start to boot Legacy OS
BDS_GO_UEFI_BOO T	BDS	30	Start to boot UEFI OS
BDS_LEGACY16_PR EPARE_TO_BOOT	BDS	31	Prepare to Boot to Legacy OS
BDS_EXIT_BOOT_S ERVICES*	BDS	32	Send END of POST Message to ME via HECI
BDS_LEGACY_BOO T_EVENT	BDS 33		Last Chipset initial before boot to Legacy OS.
BDS_ENTER_LEGA CY_16_BOOT	BDS	34	Ready to Boot Legacy OS.
BDS_RECOVERY_S TART_FLASH	BDS 35		Fast Recovery Start Flash.
* 3rd party relate functions – Platform dependence.			

Table 4-6. S3 Functions POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
S3_RESTORE_MEMORY_CONTROLLER	PEI	C0	Memory initial for S3 resume
S3_INSTALL_S3_MEMORY	PEI	C1	Get S3 resume required data from memory
S3_SWITCH_STACK	PEI	C2	Start to use memory during S3 resume
S3_MEMORY_CALLBACK	PEI	C3	Set cache for physical memory during S3 resume
S3_ENTER_S3_RESUME_PEIM	PEI	C4	Start to restore system configuration
S3_BEFORE_ACPI_BOOT_SCRIPT	PEI	C5	Restore system configuration stage1
S3_BEFORE_RUNTIME_BOOT_SCRIPT	PEI C6		Restore system configuration stage2
S3_BEFORE_RELOCATE_SMM_BASE	PEI	C7	Relocate SMM BASE during S3 resume
S3_BEFORE_MP_INIT	PEI C8		Multi-processor initial during S3 resume
S3_BEFORE_RESTORE_ACPI_CALLBACK	PEI	C9	Start to restore system configuration in SMM
S3_AFTER_RESTORE_ACPI_CALLBACK	PEI	CA	Restore system configuration in SMM complete
S3_GO_TO_FACS_WAKING_VECTOR	PEI	CB	Back to OS

Table 4-7. ACPI Functions POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
ASL_ENTER_S1	ASL	51	Prepare to enter S1
ASL_ENTER_S3	ASL	53	Prepare to enter S3
ASL_ENTER_S4	ASL	54	Prepare to enter S4

Table 4-7. ACPI Functions POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
ASL_ENTER_S5	ASL	55	Prepare to enter S5
ASL_WAKEUP_S1 ASL		E1	System wake up from S1
ASL_WAKEUP_S3 ASL		E3	System wake up from S3
ASL_WAKEUP_S4 ASL		E4	System wake up from S4

Table 4-8. SMM Functions POST Code Table:

Functionality Name (Include\ PostCode.h)	Phase	Post Code	Description
SMM_IDENTIFY_FLASH_DEVICE	SMM 0x	A0	Identify Flash device in SMM
SMM_SMM_PLATFORM_INIT	SMM 0x	A2	SMM service initial
SMM_ACPI_ENABLE_START	SMM	0xA6	OS call ACPI enable function
SMM_ACPI_ENABLE_END	SMM 0	xA7	ACPI enable function complete
SMM_S1_SLEEP_CALLBACK	SMM 0xA1		Enter S1
SMM_S3_SLEEP_CALLBACK	SMM 0xA3		Enter S3
SMM_S4_SLEEP_CALLBACK	SMM 0xA4		Enter S4
SMM_S5_SLEEP_CALLBACK	SMM 0xA5		Enter S5
SMM_ACPI_DISABLE_START	SMM	0xA8	OS call ACPI disable function
SMM_ACPI_DISABLE_END	SMM 0xA9		ACPI disable function complete

Table 4-9. InsydeH2ODDT Debugger POST Code Table:

Functionality Name (Include\ PostCode.h)	PostCode	Description
Used by Insyde debugger	0x0D	Waiting for device connect
Used by Insyde debugger	0xD0	Waiting for device connect
Used by Insyde debugger	0xD1	InsydeH2ODDT Ready
Used by Insyde debugger	0xD2	EHCI not found
Used by Insyde debugger	0xD3	Debug port connect low speed device
Used by Insyde debugger	0xD4	DDT Cable become low speed device
Used by Insyde debugger	0xD5	DDT Cable Transmission Error (Get descriptor fail)
Used by Insyde debugger	0xD6	DDT Cable Transmission Error (Set Debug mode fail)
Used by Insyde debugger	0xD7	DDT Cable Transmission Error (Set address fail)

CHAPTER 5
Jumper and Connector Locations

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Clearing Password Check and BIOS Recovery 5-5
Clearing Password Check 5-5
Clear CMOS Jumper 5-6
BIOS Recovery by Crisis Disk 5-6

Jumper and Connector Locations

Mainboard Jumper and Connector Locations

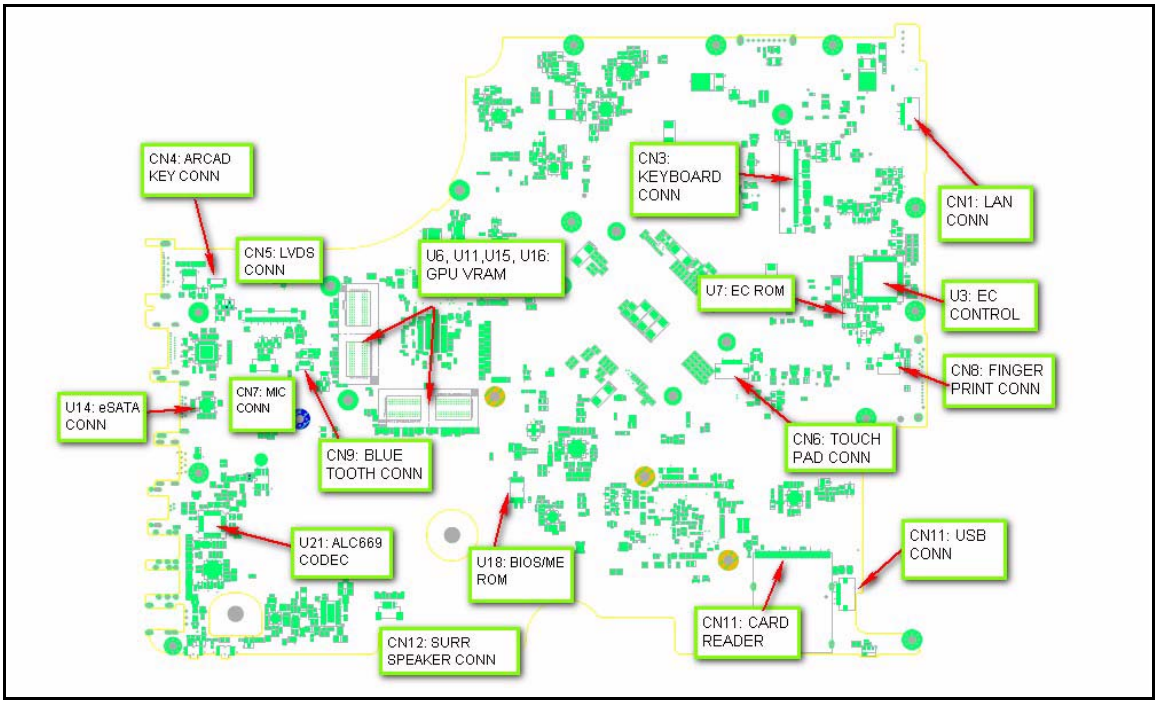

Figure 5-1. Mainboard Top

Table 5-1. Mainboard Top

Item	Description	Item	Description
U14	eSATA CONN	CN3	KEYBOARD CONN
U21	ALC669 CODEC	U7	EC ROM
CN7	MIC CONN	CN6	TOUCH PAD CONN
CN4	ARCAD KEY CONN	CN11	CARD READER
CN5	LVDS CONN	CN11	USB CONN
CN9	BLUETOOTH CONN	CN8	FINGER PRINT CONN
CN12	SURR SPEAKER CONN	U3	EC CONTROL
U18	BIOS/ME ROM	CN1	LAN CONN
U6, U11, U15, U16	GPU VRAM		

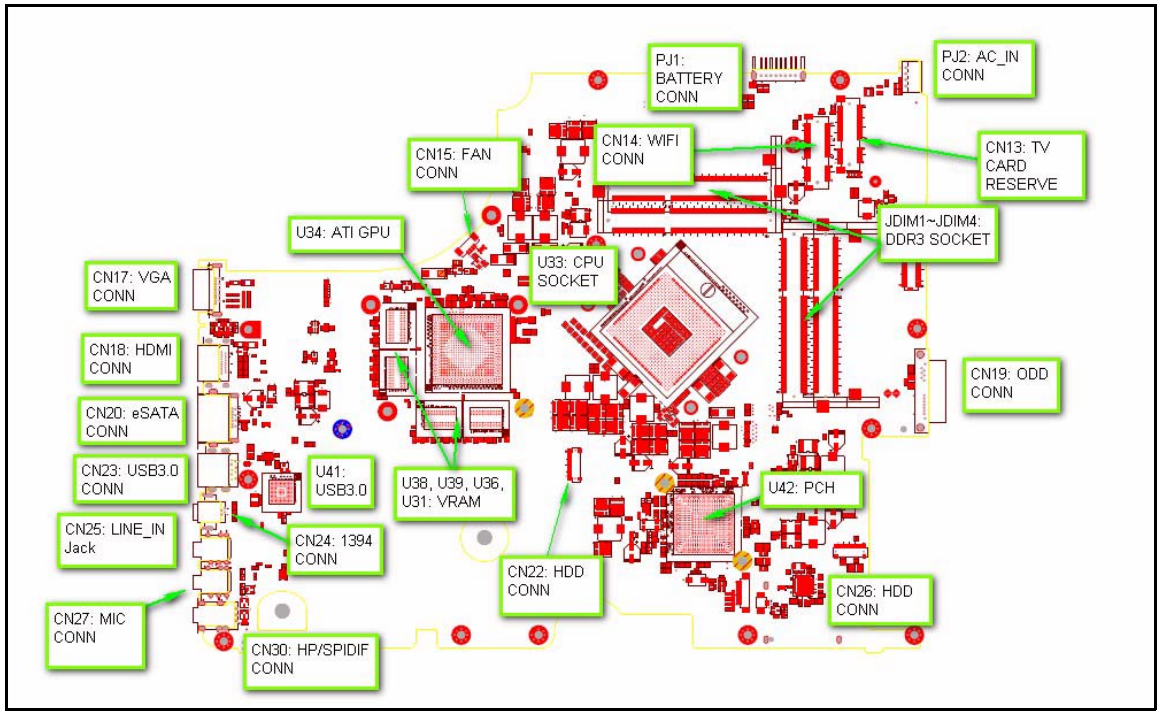

Figure 5-2. Mainboard Bottom

Table 5-2. Mainboard Bottom

Item	Description	Item	Description
CN17	VGA CONN	CN15	FAN CONN
CN18	HDMI CONN	U33	CPU SOCKET
CN20	eSATA CONN	CN22	HDD CONN
CN23	USB 3.0 CONN	PJ1	BATTERY CONN
CN25	LINE_IN Jack	CN14	WIFI CONN
CN27	MIC CONN	U42	PCH
CN30	HP/SPIDIF CONN	CN26	HDD CONN
CN24	1394 CONN	CN19	ODD CONN
U41	USB 3.0	JDIM1~ JDIM4	DDR3 SOCKET
U34	ATI GPU	CN13	TV CARD RESERVE
U38, U39, U36, U31	VRAM	PJ2	AC_IN CONN

Clearing Password Check and BIOS Recovery

This section provides users with the standard operating procedures of clearing password and BIOS recovery for the Acer AS8950G. The machine provides one Hardware Open Gap on main board for clearing password check, and one hot key for enabling BIOS Recovery.

Clearing Password Check

NOTE:

The following procedure is only for clearing BIOS Password (Supervisor Password and User Password).

Steps for Clearing BIOS Password Check

If users set BIOS Password (Supervisor Password and/or User Password) for a security reason, BIOS will ask the password during systems POST or when systems enter to BIOS Setup menu. However, once it is necessary to bypass the password check, users need to short the HW Gap to clear the password by the following steps:

1. Remove power from the system.
2. Remove HDD, AC and Battery.
3. Disconnect the RTC Battery
4. Locate the RTCRST# jumper.
5. Use an electric conductivity tool to short the two points of the RTCRST# jumper.
6. Plug in AC, keeping the RTCRST# jumper shorted.
7. Press *Power Button* until BIOS POST is finished, then remove the conductivity tool from the RTCRST# jumper.
8. Restart the system. Press ***F2*** to enter BIOS Setup menu.
9. If there is no Password request, BIOS Password is cleared.
10. If a password is requested, repeat Steps 1 through 9.

Clear CMOS Jumper

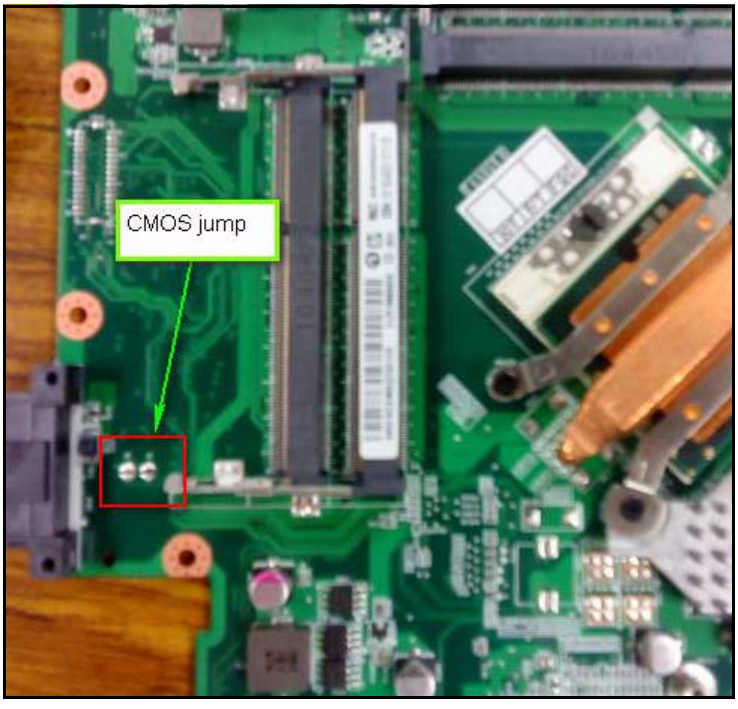

Figure 5-3. CMOS Jumper

Table 5-3. CMOS Jumper

Item	Description
RTCRST#	Clear CMOS Jumper

BIOS Recovery by Crisis Disk

BIOS Recovery Boot Block

BIOS Recovery Boot Block is a special block of BIOS. It is used to boot up the system with minimum BIOS initialization. Users can enable this feature to restore the BIOS firmware to a successful one once the previous BIOS flashing process failed.

BIOS Recovery Hot key

The system provides a function hot key, **<Fn+Esc>**, for enable BIOS Recovery process when system is powered on during BIOS POST. To use this function, it is strongly recommended to have the AC adapter and Battery present. If this function is enabled, the system will force the BIOS to enter a special BIOS block, called Boot Block.

Steps for BIOS Recovery from USB Storage

NOTE:

Prior to performing the recovery, prepare a Crisis USB key. The Crisis USB key is created by executing the Crisis Disk program on another system with Windows 7 OS.

To Create a Crisis USB key, perform the following:

1. Format the USB storage disk using the Fast Format option.
2. Save ROM file (file name: ***ZYF.fd***) to the root directory of USB storage. Make sure that there is no other BIOS file saved in the same directory.
3. Plug USB storage into USB port.
4. Press <**Fn + ESC>** button then plug in AC power.
5. The Power button flashes once.
6. Press ***Power*** button to initiate system CRISIS mode.
7. When CRISIS is complete, the system auto restarts with a workable BIOS.
8. Update the latest version BIOS for this machine by regular BIOS flashing process.

CHAPTER 6
FRU (Field Replaceable Unit) List

Exploded Diagrams 6-4
FRU List 6-8
Screw List 6-19

FRU (Field Replaceable Unit) List

This chapter provides users with a FRU (Field Replaceable Unit) listing in global configurations for the Acer AS8950G. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE:

WHEN ORDERING FRU PARTS, check the most up-to-date information available on the regional web or channel. Part number changes will not be noted on the printed Service Guide. For ACER AUTHORIZED SERVICE PROVIDERS, the Acer office may have a DIFFERENT part number code from those given in the FRU list of this printed Service Guide. Users MUST use the local FRU list provided by the regional Acer office to order FRU parts for repair and service of customer machines.

NOTE:

To scrap or to return the defective parts, users should follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by the regional Acer office on how to return it.

Exploded Diagrams

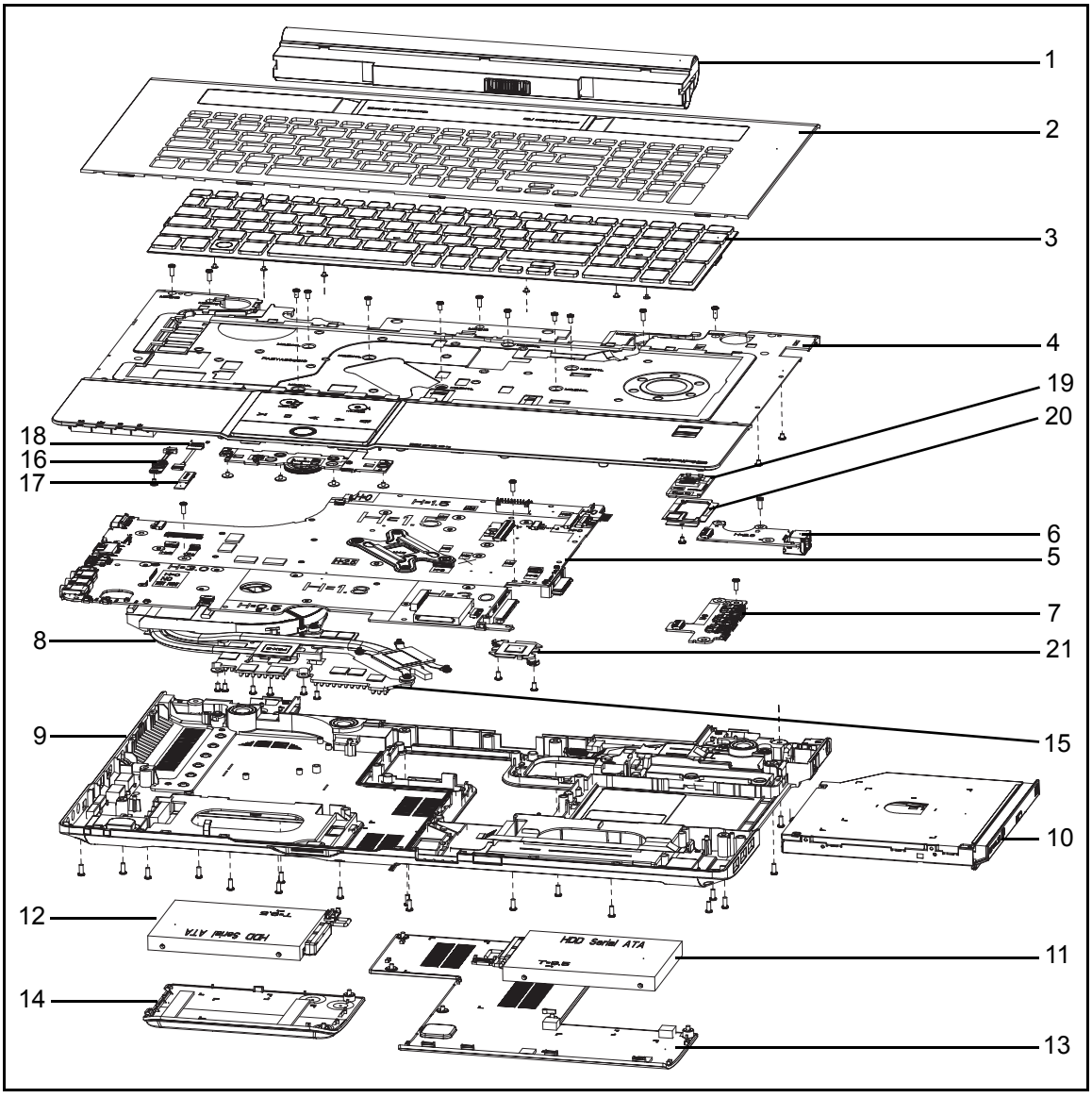

Figure 6-1. Upper & Lower Cover Exploded Diagram

Table 6-1. Upper & Lower Cover Exploded Diagram

No.	Description	Acer Part No.
1	Battery	BT.00805.015
2	KB COVER SUB ASSY	60.PWC07.001
3	KB	KB.I170A.179
4	TOP ASSY including microphone	60.RCN07.001
5	MB	MB.RCN06.001

Table 6-1. Upper & Lower Cover Exploded Diagram

No.	Description	Acer Part No.
6	LAN/B ASSY	55.RCN07.001
7	USB/B ASSY	55.RCN07.002
8	THERMAL MODULE ASSY	60.RCN07.003
9	BASE SUB ASSY	60.RCN07.002
10	DVD BLUE RAY	6M.RCN07.001
11	1ST HDD	KH.16004.008
12	2ND HDD	KH.16004.008
13	RAM DOOR ASSY	42.RCN07.001
14	2ND HDD DOOR	42.RCN07.003
15	VGA HEATSINK	33.RCN07.001
16	BLUETOOTH MODULE	BH.21100.008
17	BLUETOOTH CABLE	50.PWC07.003
18	TOUCHPAD/B	55.RCN07.004
19	FP/B ASSY	55.RCN07.003
20	FP BRACKET	33.PWC07.001
21	PCH HEATSINK	60.PUM07.006

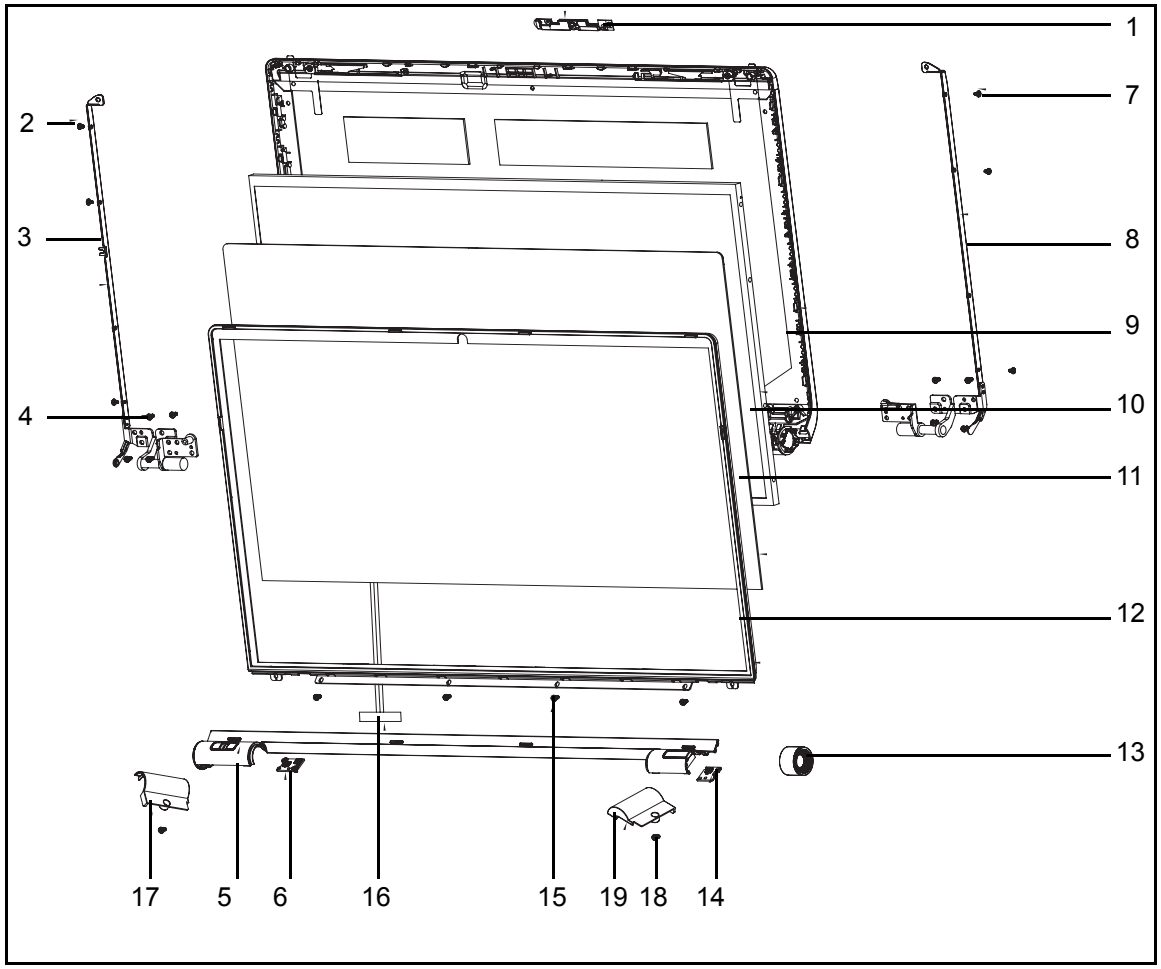

Figure 6-2. LCD Assembly Exploded Diagram

Table 6-2. LCD Assembly Exploded Diagram

No.	Description	Acer Part No.
1	Camera HF1315 (in LCD 18.4” FHD Glare assy.)	See LCD 18.4” FHD Glare assy.
2	Screw M2.0 x 3.0-I	86.S0207.001
3	Glass Hinge-L (in LCD 18.4” FHD Glare assy.)	See LCD 18.4” FHD Glare assy.
4	Screw M2.5 x 4.0-I	86.PWC07.001
5	LCD Bezel Tuba Sleeve Sub Assy. (in LCD 18.4” FHD Glare assy.)	See LCD 18.4” FHD Glare assy.
6	LED/B Assy. (in LCD 18.4” FHD Glare assy.)	See LCD 18.4” FHD Glare assy.
7	Screw M2.0 x 3.0-i	86.S0207.001
8	Glass Hinge-R (in LCD 18.4” FHD Glare assy.)	See LCD 18.4” FHD Glare assy.
9	LCD Cover Sub Assy. (in LCD 18.4” FHD Glare assy.)	See LCD 18.4” FHD Glare assy.
10	LCD 18.4” FHD Glare	6M.RCN07.004

Table 6-2. LCD Assembly Exploded Diagram

No.	Description	Acer Part No.
11	Glass 0.7-2	See LCD 18.4” FHD Glare assy.
12	LCD Non-bezel	See LCD 18.4” FHD Glare assy.
13	LCD Bezel Tuba Sleeve Sub Assy.	See LCD 18.4” FHD Glare assy.
14	Hinge Cap R	See LCD 18.4” FHD Glare assy.
15	Screw M2.5 x 5.0-I	Not available at time of printing
16	Cable Assy. (in LCD 18.4” FHD Glare assy.)	See LCD 18.4” FHD Glare assy.
17	Hinge Cap L	See LCD 18.4” FHD Glare assy.
18	Hinge Cap R	See LCD 18.4” FHD Glare assy.
19	Screw M2.5 x 6-I	86.A08V7.004

FRU List

Table 6-3. FRU List

Category	Description	P/N
ADAPTER		
	Adapter DELTA 120W-DE 19V 1.7x5.5x11 Green ADP-120ZB BBGB, LV5+OBL LED LF	AP.12001.009
	Adapter LITE-ON 120W-DE 19V 1.7x5.5x11 Green PA-1121-04AC, LV5+OBL LED LF	AP.12003.003
BATTERY		
	Battery PANASONIC AS10C Li-Ion 4S2P PANASONIC 8 cell 6000mAh Main COMMON ID:AS10C5E	BT.00805.015
	Battery SIMPLO AS10C Li-Ion 4S2P SAMSUNG 8 cell 6000mAh Main COMMON ID:AS10C7E	BT.00807.028
BOARD		
	Liteon Wireless LAN Atheros HB97 2x2 BGN (HM) WN6603AH	NI.23600.073
	Foxconn Wireless LAN Broadcomm 43225 2x2 BGN (HM) T77H103.00	NI.23600.066
	Foxconn Wireless LAN Atheros HB97 2x2 BGN (HM)	NI.23600.072
	Foxconn Wireless LAN Atheros HB95BG (HM) T77H121.10	NI.23600.077
	Foxconn Bluetooth FOX BRM 2046 BT2.1	BH.21100.008
	Foxconn Bluetooth ATH AR3011	BH.21100.009
	Foxconn Bluetooth BRM 2070 (T77H114.01) BT 3.0	BH.21100.010
	Foxconn Bluetooth ATH BU12	BH.21100.011
	LAN BOARD (RJ45)	55.RCN07.001

Table 6-3. FRU List (Continued)

Category	Description	P/N
	USB BOARD	55.RCN07.002
	FP BOARD	55.RCN07.003
	TOUCHPAD BUTTON BOARD	55.RCN07.004
CABLE		
	POWER CORD US 3PIN ROHS	27.TAXV7.001
	POWER CORD PRC 3P Y536B30001218008	27.TATV7.004
	POWER CORD(S.A) 1.8M 3BLACK FZ010008-006	27.T48V7.001
	POWER CORD ARGENTINE 3 PIN BLACK	27.S0207.001
	POWER CORD AU W/LABEL (3 PIN)	27.A50V7.003
	PWR CORD V943B30001218008 DANISH 3P	27.A03V7.006
	PWR CORD(ISR)1.8M 3PBLK FZ0I0008-038	27.TATV7.005
	POWER CORD JAPAN	27.TAXV7.003
	POWER CORD AF-S (INDIA)	27.A50V7.001
	POWER CORD SWISS 3 PIN	27.A99V7.004
	POWER CORD UK 3PIN	27.A03V7.004
	POWER CORD US-110V (BSMI)	27.A99V7.002
	POWER CORD(EU) 1.8M 3PBLACK FM010008-010	27.TATV7.001
	POWER CORD ITALIAN 3PIN	27.A99V7.005
	POWER CORD BRAZIL IMETRO 3 PIN	27.S0607.001

Table 6-3. FRU List (Continued)

Category	Description	P/N
	BLUETOOTH CABLE (8P)	50.PWC07.003
	BLUETOOTH CABLE (6P)	50.RCN07.001
CASE/COVER/BRACKET ASSEMBLY		
	KB FRAME (FOR 103KS)	60.PWC07.001
	KB FRAME (FOR 104KS)	60.PWC07.009
	KB FRAME (FOR 107KS)	60.PWC07.010
	UPPER CASE (W/FP FFC,TP FFC, TP BUTTON FFC)	60.RCN07.001
	LOWER CASE	60.RCN07.002
	BASE DOOR (see image)	42.RCN07.001
	BASE DOOR FOR 7mm	42.RCN07.002
	2ND HDD DOOR FOR 9.5mm	42.RCN07.003
	2ND HDD DOOR FOR 7mm	42.RCN07.004

Table 6-3. FRU List (Continued)

Category	Description	P/N
	2ND HDD DOOR FOR EMPTY	42.PWC07.001
	FP BRACKER	33.PWC07.001
	DUMMY CARD	42.PWC07.003
CPU/PROCESSOR		
	CPU Intel Core i7 i7-2820QM PGA 2.3G 45W 4/8	KC.28201.QMP
	CPU Intel Core i7 i7-2720QM PGA 2.2G 45W 4/8	KC.27201.QMP
	CPU Intel Core i7 i7-2720QM PGA 2.2G 45W 4/8	KC.27201.QMP
	CPU Intel Core i7 i7-2630QM PGA 2.0G 45W 4/8	KC.26301.QMP
	CPU Intel Core i7 i7-2630QM PGA 2.0G 45W 4/8	KC.26301.QMP
	CPU(988)SANDYBRIDGE 2.7G Q16M(PGA) - DC	TBD
	CPU(988)SANDYBRIDGE 2.6G Q16P(PGA) - DC	TBD
	CPU(988P)SANDYBRIDGE 2.5G Q17N(PGA) - DC	TBD
	CPU(988P)SANDYBRIDGE 2.2G Q154(PGA) - QC	TBD
	CPU(988P)SANDYBRIDGE 1.8G Q15M(PGA) - QC	
DVD RW DRIVE		

Table 6-3. FRU List (Continued)

Category	Description	P/N
	DVD/RW SUPER MULTI MODULE 12.7mm DL 8X	6M.RCN07.001
	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X GT32N (R5-2) LF W/O bezel SATA with Renesas solution + PCC LD (HF + Windows 7)	KU.0080D.055
	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X GT34N LF W/O bezel SATA Zero Power Supported, PCC LD (HF + Windows 7)	KU.0080D.057
	ODD PANASONIC Super-Multi DRIVE 12.7mm Tray DL 8X UJ890A LF W/O bezel SATA (HF + Windows 7)	KU.00807.070
	ODD PLDS Super-Multi DRIVE 12.7mm Tray DL 8X DS-8A5SH LF+HF W/O bezel SATA With TI + Rohm Solution (HF + Windows 7)	KU.0080F.014
	ODD PIONEER Super-Multi DRIVE 12.7mm Tray DL 8X DVR-TD10RS LF W/O bezel 1.00 SATA	KU.00805.049
	ODD BEZEL (SUPER-MULTI)	42.PWC07.004
	ODD BRACKET	33.PWC07.002
BD COMBO DRIVE		
	BD COMBO MODULE 12.7mm DL 4X	6M.RCN07.002
	ODD PLDS BD COMBO 12.7mm Tray DL 4X DS-4E1S LF W/O bezel SATA (Windows 7)	KO.0040F.003
	ODD PANASONIC BD COMBO 12.7mm Tray DL 4X UJ141AL LF W/O bezel SATA Windows 7	KO.00407.004
	ODD PIONEER BD COMBO 12.7mm Tray DL 4X BDC-TD03RS LF W/O bezel 1.01 SATA (Windows 7)	KO.00405.006

Table 6-3. FRU List (Continued)

Category	Description	P/N
	ODD BEZEL (BLUE RAY)	42.PWC07.008
	ODD BRACKET	33.PWC07.002
BD RW DRIVE		
	BD RW MODULE 12.7mm DL 4X	6M.RCN07.003
	ODD PANASONIC BD RW 12.7mm Tray DL 4X UJ240A LF W/O bezel SATA (HF+Windows 7)	KU.00407.015
	ODD BEZEL (BLUE RAY)	42.PWC07.008
	ODD BRACKET	33.PWC07.002
HDD/HARD DISK DRIVE		

Table 6-3. FRU List (Continued)

Category	Description	P/N
	HDD TOSHIBA 2.5" 5400rpm 160GB MK1665GSX, Capricorn BS, 320G/P SATA 8MB LF F/W:GJ001J	KH.16004.008
	HDD SEAGATE 2.5" 5400rpm 250GB ST9250315AS, 9HH132-189, Wyatt with new pcb SATA 8MB LF F/W:0001SDM1	KH.25001.019
	HDD HGST 2.5" 5400rpm 250GB HTS545025B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.25007.016
	HDD WD 2.5" 5400rpm 250GB WD2500BPVT-22ZEST0,ML320S-AF, 4K drive SATA 8MB LF F/W:01.01A01 4K drive	KH.25008.029
	HDD TOSHIBA 2.5" 5400rpm 250GB MK2565GSX, Capricorn BS, 320G/P SATA 8MB LF F/W:GJ001J	KH.25004.005
	HDD SEAGATE 2.5" 5400rpm 320GB ST9320310AS,9RN132-188, Cameron 320G/P SATA 8MB LF F/W:0001SDM1	KH.32001.019
	HDD HGST 2.5" 5400rpm 320GB HTS545032B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.32007.008
	HDD TOSHIBA2.5”5400rpm320GBCapricornBS,MK 3265GSXSATA8MBLFF/W:GJ001J	KH.32004.004
	HDD WD 2.5" 5400rpm 320GB WD3200BPVT-22ZEST0, ML320S, 4K drive SATA 8MB LF F/W: 01.01A01	KH.32008.022
	HDD HGST 2.5" 5400rpm 320GB HTS543232A7A384,0J11523, Eagle B7, 320G/P SATA LF+HF F/W:A60W	KH.32007.013

Table 6-3. FRU List (Continued)

Category	Description	P/N
	HDD SEAGATE 2.5" 5400rpm 500GB ST9500325AS,9HH134-189, Wyatt with new pcb SATA 8MB LF F/W:0001SDM1	KH.50001.017
	HDD HGST 2.5" 5400rpm 500GB HTS545050B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.50007.010
	HDD WD 2.5" 5400rpm 500GB WD5000BPVT-22HXZT1,ML375_AF, 4K drive SATA 8MB LF+HF F/W:01.01A01	KH.50008.021
	HDD TOSHIBA 2.5" 5400rpm 500GB MK5065GSX,Capricorn BS, 320G/P SATA 8MB LF F/W:GJ001J	KH.50004.002
	HDD WD 2.5" 5400rpm 640GB WD6400BPVT-22HXZT1, ML375M SATA 8MB LF F/W: 01.01A01	KH.64008.005
	HDD TOSHIBA 2.5" 5400rpm 640GB MK6465GSX,Capricorn BS,320G/P SATA 8MB LF F/W:GJ002J	KH.64004.001
	HDD WD 2.5" 5400rpm 750GB WD7500BPVT-22HXZT1, ML375M, 4K drive SATA 8MB LF F/W:01.01A01	KH.75008.009
	HDD TOSHIBA 2.5" 5400rpm 750GB MK7559GSX, 375G/P, Capricorn BS, 4K drive SATA 8MB LF+HF F/W:GNDD3J	KH.75004.001
	HDD CONNECTOR CABLE	50.RCN07.002
KEYBOARD		
	Keyboard ACER AF7P_A10S AF7P 103KS Silver Chinese	KB.I170A.179
	Keyboard ACER AF7P_A10S AF7P 103KS Silver Greek	KB.I170A.184
	Keyboard ACER AF7P_A10S AF7P 103KS Silver Thailand	KB.I170A.197
	Keyboard ACER AF7P_A10S AF7P 103KS Silver Russian	KB.I170A.192
	Keyboard ACER AF7P_A10S AF7P 103KS Silver Arabic	KB.I170A.175

Table 6-3. FRU List (Continued)

Category	Description	P/N
	Keyboard ACER AF7P_A10S AF7P 103KS Silver US International	KB.I170A.200
	Keyboard ACER AF7P_A10S AF7P 103KS Silver US International w/ Hebrew	KB.I170A.201
	Keyboard ACER AF7P_A10S AF7P 103KS Silver Korean	KB.I170A.188
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Bulgaria	KB.I170A.289
	Keyboard ACER AF7P_A10S AF7P 104KS Silver SLO/CRO	KB.I170A.193
	Keyboard ACER AF7P_A10S AF7P 104KS Silver CZ/SK	KB.I170A.178
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Hungarian	KB.I170A.185
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Brazilian Portuguese	KB.I170A.177
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Turkish	KB.I170A.198
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Belgium	KB.I170A.176
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Sweden	KB.I170A.195
	Keyboard ACER AF7P_A10S AF7P 104KS Silver UK	KB.I170A.199
	Keyboard ACER AF7P_A10S AF7P 104KS Silver French	KB.I170A.182
	Keyboard ACER AF7P_A10S AF7P 104KS Silver German	KB.I170A.183
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Italian	KB.I170A.186
	Keyboard ACER AF7P_A10S AF7P 104KS Silver US w/ Canadian French	KB.I170A.202
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Danish	KB.I170A.180
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Nordic	KB.I170A.189
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Spanish	KB.I170A.194
	Keyboard ACER AF7P_A10S AF7P 104KS Silver FR/Arabic	KB.I170A.181

Table 6-3. FRU List (Continued)

Category	Description	P/N
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Swiss/G	KB.I170A.196
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Portuguese	KB.I170A.191
	Keyboard ACER AF7P_A10S AF7P 104KS Silver Norwegian	KB.I170A.190
	Keyboard ACER AF7P_A10S AF7P 107KS Silver Japanese	KB.I170A.187
LCD MODULE		
	LED LCD FLUSH MODULE 18.4 WUXGA GLARE W/ANTENNA*2 (WIFI)	6M.RCN07.004
MAINBOARD		
	MAINBOARD HM65 QUAD-GRANVILE 2G,W/O CPU RAM,W/CARD READER RTC BATTERY USB 3.0	MB.RCN06.001
	MAINBOARD HM65 QUAD-WHISTLER 1G,W/O CPU RAM,W/CARD READER RTC BATTERY USB 3.0	MB.RCR06.001
MEMORY		
	Memory ELPIDA SO-DIMM DDRIII 1333 1GB EBJ10UE8BDS0-DJ-F LF 128*8 0.065um	KN.1GB09.015
	Memory HYNIX SO-DIMM DDRIII 1333 1GB HMT112S6TFR8C-H9 LF 128*8 0.055um	KN.1GB0G.026
	Memory SAMSUNG SO-DIMMDDRIII13331GBM471B2873FHS-CH 9LF128*846nm	KN.1GB0B.035
	Memory HYNIX SO-DIMM DDRIII 1333 2GB HMT125S6TFR8C-H9 LF 128*8 0.055um	KN.2GB0G.016
	Memory SAMSUNG SO-DIMM DDRIII 1333 2GB M471B5673FH0-CH9 LF 128*8 46nm	KN.2GB0B.023
	Memory SAMSUNG SO-DIMM DDRIII 1333 2GB M471B5773CHS-CH9 LF 256*8 46nm	KN.2GB0B.026
	Memory ELPIDA SO-DIMM DDRIII 13332GB EBJ21UE8BDS0-DJ-FLF 128*80.065um	KN.2GB09.007
	Memory ELPIDA SO-DIMM DDRIII 1333 4GB EBJ41UF8BAS0-DJ-F LF 256*8 0.055um	KN.4GB09.001

Table 6-3. FRU List (Continued)

Category	Description	P/N
	Memory SAMSUNG SO-DIMM DDRIII 1333 4GB M471B5273CH0-CH9 LF 256*8 46nm	KN.4GB0B.010
	Memory SAMSUNG SO-DIMM DDRIII 1066 4GB M471B5273BH1-CF8 LF 256*8 0.055um	KN.4GB0B.007
HEATSINK		
	VGA HEAT SINK	33.RCN07.001
	PCH HEAT SINK	60.PUM07.006
	THERMAL MODULE DIS (45W)	60.RCN07.003
SPEAKER		
	SPEAKER MODULE (W/ L/R) FRONT	23.RCN07.001
	SPEAKER MODULE (W/ L/R) W/ SUB-WOOFER BACK	23.RCN07.002
MISCELLANEOUS		
	FRONT RUBBER FOOT	47.PWC07.002
	BT RUBBER	47.PWC07.001
	BACK RUBBER FOOT	47.PWC07.003

Screw List

Table 6-4. Screw List

Category	Description	P/N
SCREW		
	SCREW M2.5*6-I(BNI)(NYLOK)	86.A08V7.004
	SCREW M2.5*4.0-I(NI)(NYLOK)	86.PWC07.001
	SCREW M2.5*4-I(BNI)	86.N1407.003
	SCREW M2.5*2.3-I(BZN)(NYLOK)IRON	86.PWC07.002
	SCREW M2.0*3.0-I IRON	86.S0207.001
	SCREW M2-0.4*2-I(BNI)(NYLOK)(7,0.6)IRON	86.W4107.002
	SCREW M1.6*1.35-I(BZN)(NYLOK)IRON	86.PWC07.003

CHAPTER 7
Model Definition and Configuration

AS8950G 7-3

Model Definition and Configuration

AS8950G

Table 7-1. RO, Description

Model	RO	Country	P/N	Description
AS8950G-263121.5TBnss	EMEA	ME	LX.RCN02.012	AS8950G-263121.5TBnss EM W7HP64EMASME1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 4G+4G+4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ARA1
AS8950G-263121.5TWnss	EMEA	UK	LX.RCN02.010	AS8950G-263121.5TWnss W7HP64ASGB1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 4G+4G+4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_EN11
AS8950G-263161.5TWnss	EMEA	AT	LX.RCN02.023	AS8950G-263161.5TWnss W7HP64ASAT1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 4G+4G+4G+4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_DE61
AS8950G-263161.5TWnss	AAP	TH	LX.RCN07.002	AS8950G-263161.5TWnss EM W7UT64EMASTH1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 4G+4G+4G+4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_TH71
AS8950G-2634G1TBnss	EMEA	FR	LX.RCN02.001	AS8950G-2634G1TBnss W7HP64ASFR1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*2G/500_L+500_L/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_FR21
AS8950G-2634G1TBnss	TWN	GCTWN	LX.RCR02.009	AS8950G-2634G1TBnss W7HP64ASTW1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2*2G/500_L+500_L/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_R_TC41

Table 7-1. RO, Description (Continued)

Model	RO	Country	P/N	Description
AS8950G-2634G1TMnss	TWN	GCTWN	LX.RCR02.006	AS8950G-2634G1TMnss W7HP64ASTW1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2*2G/500_L+500_L/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_TC41
AS8950G-2634G1TMnss	EMEA	ES	LX.RCN02.014	AS8950G-2634G1TMnss W7HP64ASES1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3J 2*2G/500_L+500_L/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ES51
AS8950G-2634G64Bnss	EMEA	UK	LX.RCR02.003	AS8950G-2634G64Bnss W7HP64ASGB1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 1*4G/640/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_EN11
AS8950G-2634G64Bnss	EMEA	UK	LX.RCR02.008	AS8950G-2634G64Bnss W7HP64ASGB1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2*2G/640/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_EN11
AS8950G-2634G66Mnss	WW	WW	S2.RCR02.001	AS8950G-2634G66Mnss W7HP64ASWW1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3J 1*4G/500_L+160/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_RC_ES62
AS8950G-2634G75Bnss	EMEA	DK	LX.RCR02.005	AS8950G-2634G75Bnss W7HP64ASDK2 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2*2G/750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ENS1
AS8950G-2634G75Bnss	EMEA	DE	LX.RCR02.004	AS8950G-2634G75Bnss W7HP64ASDE1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2*2G/750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_DE11

Table 7-1. RO, Description (Continued)

Model	RO	Country	P/N	Description
AS8950G-2634G75Mnss	EMEA	FR	LX.RCR02.002	AS8950G-2634G75Mnss W7HP64ASFR1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2*2G/750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_FR21
AS8950G-2634G75Mnss	EMEA	TR	LX.RCR02.001	AS8950G-2634G75Mnss EM W7HP64EMASTR1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2*2G/750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_TR31
AS8950G-2634G75Wiss	EMEA	RU	LX.RCR02.007	AS8950G-2634G75Wiss W7HP64RUASRU1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2*2G/750/BT/8L3.0/5R/CBUL_bg_FP_1.3C_AL_RU11
AS8950G-2634G82Mnss	WW	WW	S2.RCR02.002	AS8950G-2634G82Mnss W7HP64ASWW1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3J 1*4G/500_L+320/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_RC_ES62
AS8950G-2636G1.28TWnss	EMEA	UK	LX.RCN02.013	AS8950G-2636G1.28TWnss W7HP64ASGB1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2G+2G+2G/640+640/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_EN11
AS8950G-2636G1TWnss	EMEA	UK	LX.RCN02.011	AS8950G-2636G1TWnss W7HP64ASGB1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 4G+2G/500_L+500_L/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_EN11
AS8950G-2638G1.28TMnss	AAP	PH	LX.RCN02.022	AS8950G-2638G1.28TMnss EM W7HP64EMASPH1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/640+640/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ES61

Table 7-1. RO, Description (Continued)

Model	RO	Country	P/N	Description
AS8950G-2638G1.28TMnss	AAP	PH	LX.RCN07.007	AS8950G-2638G1.28TMnss EM W7UT64EMASPH1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/640+640/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ES61
AS8950G-2638G1.28TMnss	EMEA	ES	LX.RCN02.016	AS8950G-2638G1.28TMnss W7HP64ASES1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3J 2G+2G+2G+2G/640+640/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ES51
AS8950G-2638G1.5TBnss	EMEA	DE	LX.RCN02.003	AS8950G-2638G1.5TBnss W7HP64ASDE1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2G+2G+2G+2G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_DE11
AS8950G-2638G1.5TBnss	EMEA	GR	LX.RCN02.020	AS8950G-2638G1.5TBnss W7HP64ASGR1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/750+750/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_EL32
AS8950G-2638G1.5TBnss	EMEA	IT	LX.RCN02.005	AS8950G-2638G1.5TBnss W7HP64ASIT1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_IT11
AS8950G-2638G1.5TBnss	EMEA	ME	LX.RCN02.021	AS8950G-2638G1.5TBnss EM W7HP64EMASME1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ARA1
AS8950G-2638G1.5TMnss	AAP	AU/NZ	LX.RCR02.012	AS8950G-2638G1.5TMnss W7HP64ASAU1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2G+2G+2G+2G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ES62

Table 7-1. RO, Description (Continued)

Model	RO	Country	P/N	Description
AS8950G-2638G1.5TMnss	EMEA	ZA	LX.RCN02.024	AS8950G-2638G1.5TMnss EM W7HP64EMASZA2 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ES61
AS8950G-2638G1.5TWiss	EMEA	RU	LX.RCN02.019	AS8950G-2638G1.5TWiss W7HP64RUASRU1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2G+2G+2G+2G/750+750/BT/8L3.0/5R/CBUL_bg_FP_1.3C_AL_RU11
AS8950G-2638G1.5TWnss	EMEA	DK	LX.RCN02.018	AS8950G-2638G1.5TWnss W7HP64ASDK2 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ENS1
AS8950G-2638G1.5TWnss	EMEA	FR	LX.RCN02.002	AS8950G-2638G1.5TWnss W7HP64ASFR1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2G+2G+2G+2G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_FR21
AS8950G-2638G1.5TWnss	EMEA	DE	LX.RCN02.007	AS8950G-2638G1.5TWnss W7HP64ASDE1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2G+2G+2G+2G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_DE11
AS8950G-2638G1.5TWnss	AAP	PH	LX.RCN07.006	AS8950G-2638G1.5TWnss EM W7UT64EMASPH1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ES61
AS8950G-2638G1.5TWnss	AAP	TH	LX.RCN07.001	AS8950G-2638G1.5TWnss EM W7UT64EMASTH1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_TH71

Table 7-1. RO, Description (Continued)

Model	RO	Country	P/N	Description
AS8950G-2638G1.5TWnss	EMEA	UK	LX.RCN02.009	AS8950G-2638G1.5TWnss W7HP64ASGB1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_EN11
AS8950G-2638G1TBnss	EMEA	DK	LX.RCN02.017	AS8950G-2638G1TBnss W7HP64ASDK2 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/500_L+500_L/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ENS1
AS8950G-2638G1TBnss	EMEA	DE	LX.RCN02.006	AS8950G-2638G1TBnss W7HP64ASDE1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2G+2G+2G+2G/500_L+500_L/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_DE11
AS8950G-2638G1TBnss	EMEA	DE	LX.RCN02.008	AS8950G-2638G1TBnss W7HP64ASDE1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2G+2G+2G+2G/500_L+500_L/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_DE11
AS8950G-2638G1TBnss	EMEA	IT	LX.RCN02.004	AS8950G-2638G1TBnss W7HP64ASIT1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/500_L+500_L/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_IT11
AS8950G-2638G1TMnss	EMEA	ES	LX.RCN02.015	AS8950G-2638G1TMnss W7HP64ASES1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3J 2G+2G+2G+2G/500_L+500_L/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ES51
AS8950G-2728G1.5TBnss	AAP	AU/NZ	LX.RCR02.010	AS8950G-2728G1.5TBnss W7HP64ASAU1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2G+2G+2G+2G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ES62

Table 7-1. RO, Description (Continued)

Model	RO	Country	P/N	Description
AS8950G-2728G1.5TMnss	AAP	AU/NZ	LX.RCR02.013	AS8950G-2728G1.5TMnss W7HP64ASAU1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2G+2G+2G+2G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ES62
AS8950G-2728G1.5TWnss	AAP	AU/NZ	LX.RCR02.011	AS8950G-2728G1.5TWnss W7HP64ASAU1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3UJ 2G+2G+2G+2G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_ES62
AS8950G-2728G1.5TWnss	AAP	TH	LX.RCN07.003	AS8950G-2728G1.5TWnss EM W7UT64EMASTH1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3UJ 2*4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_TH71
AS8950G-2728G89Mnss	WW	WW	S2.RCR07.001	AS8950G-2728G89Mnss W7UT64ASWW1 MC WHISTLER_PRO1GBCFPssQ_3D4 V3J 2G+2G+2G+2G/640+250/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_RC_ES62
AS8950G-282161.5TWnss	WW	WW	S2.RCN07.002	AS8950G-282161.5TWnss W7UT64ASWW1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3J 4G+4G+4G+4G/750+750/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_RC_ES62
AS8950G-282161TWnss	WW	WW	S2.RCN07.001	AS8950G-282161TWnss W7UT64ASWW1 MC GRANVILE_PRO2GBCFPssQ_3D4 V3J 4G+4G+4G+4G/750+250/BT/8L3.0/5R/CBUL_bgn_FP_1.3C_AL_RC_ES62

Table 7-2. CPU, LCD

Model	Country	P/N	CPU	LCD
AS8950G-263121.5TBnss	ME	LX.RCN02.012	Ci72630QM	NLED18.4WUXGAGL
AS8950G-263121.5TWnss	UK	LX.RCN02.010	Ci72630QM	NLED18.4WUXGAGL

Table 7-2. CPU, LCD (Continued)

Model	Country	P/N	CPU	LCD
AS8950G-263161.5T Wnss	AT	LX.RCN02.023	Ci72630QM	NLED18.4WUXGAGL
AS8950G-263161.5T Wnss	TH	LX.RCN07.002	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G1TBn ss	FR	LX.RCN02.001	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G1TBn ss	GCTWN	LX.RCR02.009	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G1TMn ss	GCTWN	LX.RCR02.006	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G1TMn ss	ES	LX.RCN02.014	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G64Bn ss	UK	LX.RCR02.003	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G64Bn ss	UK	LX.RCR02.008	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G66Mn ss	WW	S2.RCR02.001	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G75Bn ss	DK	LX.RCR02.005	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G75Bn ss	DE	LX.RCR02.004	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G75Mn ss	FR	LX.RCR02.002	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G75Mn ss	TR	LX.RCR02.001	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G75Wi ss	RU	LX.RCR02.007	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2634G82Mn ss	WW	S2.RCR02.002	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2636G1.28T Wnss	UK	LX.RCN02.013	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2636G1TW nss	UK	LX.RCN02.011	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.28T Mnss	PH	LX.RCN02.022	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.28T Mnss	PH	LX.RCN07.007	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.28T Mnss	ES	LX.RCN02.016	Ci72630QM	NLED18.4WUXGAGL

Table 7-2. CPU, LCD (Continued)

Model	Country	P/N	CPU	LCD
AS8950G-2638G1.5T Bnss	DE	LX.RCN02.003	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Bnss	GR	LX.RCN02.020	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Bnss	IT	LX.RCN02.005	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Bnss	ME	LX.RCN02.021	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Mnss	AU/NZ	LX.RCR02.012	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Mnss	ZA	LX.RCN02.024	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Wiss	RU	LX.RCN02.019	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Wnss	DK	LX.RCN02.018	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Wnss	FR	LX.RCN02.002	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Wnss	DE	LX.RCN02.007	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Wnss	PH	LX.RCN07.006	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Wnss	TH	LX.RCN07.001	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1.5T Wnss	UK	LX.RCN02.009	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1TBnss	DK	LX.RCN02.017	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1TBnss	DE	LX.RCN02.006	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1TBnss	DE	LX.RCN02.008	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1TBnss	IT	LX.RCN02.004	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2638G1TMnss	ES	LX.RCN02.015	Ci72630QM	NLED18.4WUXGAGL
AS8950G-2728G1.5T Bnss	AU/NZ	LX.RCR02.010	Ci72720QM	NLED18.4WUXGAGL
AS8950G-2728G1.5T Mnss	AU/NZ	LX.RCR02.013	Ci72720QM	NLED18.4WUXGAGL

Table 7-2. CPU, LCD (Continued)

Model	Country	P/N	CPU	LCD
AS8950G-2728G1.5T Wnss	AU/NZ	LX.RCR02.011	Ci72720QM	NLED18.4WUXGAGL
AS8950G-2728G1.5T Wnss	TH	LX.RCN07.003	Ci72720QM	NLED18.4WUXGAGL
AS8950G-2728G89Mn ss	WW	S2.RCR07.001	Ci72720QM	NLED18.4WUXGAGL
AS8950G-282161.5T Wnss	WW	S2.RCN07.002	Ci72820QM	NLED18.4WUXGAGL
AS8950G-282161TWn ss	WW	S2.RCN07.001	Ci72820QM	NLED18.4WUXGAGL

Table 7-3. VGA Chip, VRAM

Model	Country	P/N	VGA Chip	VRAM 1
AS8950G-26312 1.5TBnss	ME	LX.RCN02.012	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-26312 1.5TWnss	UK	LX.RCN02.010	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-26316 1.5TWnss	AT	LX.RCN02.023	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-26316 1.5TWnss	TH	LX.RCN07.002	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2634G 1TBnss	FR	LX.RCN02.001	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2634G 1TBnss	GCTWN	LX.RCR02.009	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2634G 1TMnss	GCTWN	LX.RCR02.006	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2634G 1TMnss	ES	LX.RCN02.014	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2634G 64Bnss	UK	LX.RCR02.003	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2634G 64Bnss	UK	LX.RCR02.008	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2634G 66Mnss	WW	S2.RCR02.001	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2634G 75Bnss	DK	LX.RCR02.005	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2634G 75Bnss	DE	LX.RCR02.004	WHISTLER_PRO	1G-DDR3 (64*16*8)

Table 7-3. VGA Chip, VRAM (Continued)

Model	Country	P/N	VGA Chip	VRAM 1
AS8950G-2634G 75Mnss	FR	LX.RCR02.002	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2634G 75Mnss	TR	LX.RCR02.001	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2634G 75Wiss	RU	LX.RCR02.007	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2634G 82Mnss	WW	S2.RCR02.002	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2636G 1.28TWnss	UK	LX.RCN02.013	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2636G 1TWnss	UK	LX.RCN02.011	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.28TMnss	PH	LX.RCN02.022	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.28TMnss	PH	LX.RCN07.007	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.28TMnss	ES	LX.RCN02.016	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.5TBnss	DE	LX.RCN02.003	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.5TBnss	GR	LX.RCN02.020	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.5TBnss	IT	LX.RCN02.005	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.5TBnss	ME	LX.RCN02.021	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.5TMnss	AU/NZ	LX.RCR02.012	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2638G 1.5TMnss	ZA	LX.RCN02.024	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.5TWiss	RU	LX.RCN02.019	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.5TWnss	DK	LX.RCN02.018	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.5TWnss	FR	LX.RCN02.002	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.5TWnss	DE	LX.RCN02.007	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.5TWnss	PH	LX.RCN07.006	GRANVILE_PRO	2G-DDR3 (128*16*8)

Table 7-3. VGA Chip, VRAM (Continued)

Model	Country	P/N	VGA Chip	VRAM 1
AS8950G-2638G 1.5TWnss	TH	LX.RCN07.001	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1.5TWnss	UK	LX.RCN02.009	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1TBnss	DK	LX.RCN02.017	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1TBnss	DE	LX.RCN02.006	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1TBnss	DE	LX.RCN02.008	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1TBnss	IT	LX.RCN02.004	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2638G 1TMnss	ES	LX.RCN02.015	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2728G 1.5TBnss	AU/NZ	LX.RCR02.010	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2728G 1.5TMnss	AU/NZ	LX.RCR02.013	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2728G 1.5TWnss	AU/NZ	LX.RCR02.011	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-2728G 1.5TWnss	TH	LX.RCN07.003	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-2728G 89Mnss	WW	S2.RCR07.001	WHISTLER_PRO	1G-DDR3 (64*16*8)
AS8950G-28216 1.5TWnss	WW	S2.RCN07.002	GRANVILE_PRO	2G-DDR3 (128*16*8)
AS8950G-28216 1TWnss	WW	S2.RCN07.001	GRANVILE_PRO	2G-DDR3 (128*16*8)

Table 7-4. Memory 1 & 2

Model	Country	P/N	Memory 1	Memory 2
AS8950G-263121. 5TBnss	ME	LX.RCN02.012	SO4GBIII10	SO4GBIII10
AS8950G-263121. 5TWnss	UK	LX.RCN02.010	SO4GBIII10	SO4GBIII10
AS8950G-263161. 5TWnss	AT	LX.RCN02.023	SO4GBIII10	SO4GBIII10
AS8950G-263161. 5TWnss	TH	LX.RCN07.002	SO4GBIII10	SO4GBIII10

Table 7-4. Memory 1 & 2 (Continued)

Model	Country	P/N	Memory 1	Memory 2
AS8950G-2634G1 TBnss	FR	LX.RCN02.001	SO2GBIII10	SO2GBIII10
AS8950G-2634G1 TBnss	GCTWN	LX.RCR02.009	SO2GBIII10	SO2GBIII10
AS8950G-2634G1 TMnss	GCTWN	LX.RCR02.006	SO2GBIII10	SO2GBIII10
AS8950G-2634G1 TMnss	ES	LX.RCN02.014	SO2GBIII10	SO2GBIII10
AS8950G-2634G6 4Bnss	UK	LX.RCR02.003	SO4GBIII10	N
AS8950G-2634G6 4Bnss	UK	LX.RCR02.008	SO2GBIII10	SO2GBIII10
AS8950G-2634G6 6Mnss	WW	S2.RCR02.001	SO4GBIII10	N
AS8950G-2634G7 5Bnss	DK	LX.RCR02.005	SO2GBIII10	SO2GBIII10
AS8950G-2634G7 5Bnss	DE	LX.RCR02.004	SO2GBIII10	SO2GBIII10
AS8950G-2634G7 5Mnss	FR	LX.RCR02.002	SO2GBIII10	SO2GBIII10
AS8950G-2634G7 5Mnss	TR	LX.RCR02.001	SO2GBIII10	SO2GBIII10
AS8950G-2634G7 5Wiss	RU	LX.RCR02.007	SO2GBIII10	SO2GBIII10
AS8950G-2634G8 2Mnss	WW	S2.RCR02.002	SO4GBIII10	N
AS8950G-2636G1. 28TWnss	UK	LX.RCN02.013	SO2GBIII10	SO2GBIII10
AS8950G-2636G1 TWnss	UK	LX.RCN02.011	SO4GBIII10	SO2GBIII10
AS8950G-2638G1. 28TMnss	PH	LX.RCN02.022	SO4GBIII10	SO4GBIII10
AS8950G-2638G1. 28TMnss	PH	LX.RCN07.007	SO4GBIII10	SO4GBIII10
AS8950G-2638G1. 28TMnss	ES	LX.RCN02.016	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TBnss	DE	LX.RCN02.003	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TBnss	GR	LX.RCN02.020	SO4GBIII10	SO4GBIII10

Table 7-4. Memory 1 & 2 (Continued)

Model	Country	P/N	Memory 1	Memory 2
AS8950G-2638G1. 5TBnss	IT	LX.RCN02.005	SO4GBIII10	SO4GBIII10
AS8950G-2638G1. 5TBnss	ME	LX.RCN02.021	SO4GBIII10	SO4GBIII10
AS8950G-2638G1. 5TMnss	AU/NZ	LX.RCR02.012	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TMnss	ZA	LX.RCN02.024	SO4GBIII10	SO4GBIII10
AS8950G-2638G1. 5TWiss	RU	LX.RCN02.019	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TWnss	DK	LX.RCN02.018	SO4GBIII10	SO4GBIII10
AS8950G-2638G1. 5TWnss	FR	LX.RCN02.002	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TWnss	DE	LX.RCN02.007	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TWnss	PH	LX.RCN07.006	SO4GBIII10	SO4GBIII10
AS8950G-2638G1. 5TWnss	TH	LX.RCN07.001	SO4GBIII10	SO4GBIII10
AS8950G-2638G1. 5TWnss	UK	LX.RCN02.009	SO4GBIII10	SO4GBIII10
AS8950G-2638G1 TBnss	DK	LX.RCN02.017	SO4GBIII10	SO4GBIII10
AS8950G-2638G1 TBnss	DE	LX.RCN02.006	SO2GBIII10	SO2GBIII10
AS8950G-2638G1 TBnss	DE	LX.RCN02.008	SO2GBIII10	SO2GBIII10
AS8950G-2638G1 TBnss	IT	LX.RCN02.004	SO4GBIII10	SO4GBIII10
AS8950G-2638G1 TMnss	ES	LX.RCN02.015	SO2GBIII10	SO2GBIII10
AS8950G-2728G1. 5TBnss	AU/NZ	LX.RCR02.010	SO2GBIII10	SO2GBIII10
AS8950G-2728G1. 5TMnss	AU/NZ	LX.RCR02.013	SO2GBIII10	SO2GBIII10
AS8950G-2728G1. 5TWnss	AU/NZ	LX.RCR02.011	SO2GBIII10	SO2GBIII10
AS8950G-2728G1. 5TWnss	TH	LX.RCN07.003	SO4GBIII10	SO4GBIII10

Table 7-4. Memory 1 & 2 (Continued)

Model	Country	P/N	Memory 1	Memory 2
AS8950G-2728G89Mnss	WW	S2.RCR07.001	SO2GBIII10	SO2GBIII10
AS8950G-282161.5TWnss	WW	S2.RCN07.002	SO4GBIII10	SO4GBIII10
AS8950G-282161TWnss	WW	S2.RCN07.001	SO4GBIII10	SO4GBIII10

Table 7-5. Memory 3 & 4

Model	Country	P/N	Memory 3	Memory 4
AS8950G-263121.5TBnss	ME	LX.RCN02.012	SO4GBIII10	N
AS8950G-263121.5TWnss	UK	LX.RCN02.010	SO4GBIII10	N
AS8950G-263161.5TWnss	AT	LX.RCN02.023	SO4GBIII10	SO4GBIII10
AS8950G-263161.5TWnss	TH	LX.RCN07.002	SO4GBIII10	SO4GBIII10
AS8950G-2634G1TBnss	FR	LX.RCN02.001	N	N
AS8950G-2634G1TBnss	GCTWN	LX.RCR02.009	N	N
AS8950G-2634G1TMnss	GCTWN	LX.RCR02.006	N	N
AS8950G-2634G1TMnss	ES	LX.RCN02.014	N	N
AS8950G-2634G64Bnss	UK	LX.RCR02.003	N	N
AS8950G-2634G64Bnss	UK	LX.RCR02.008	N	N
AS8950G-2634G66Mnss	WW	S2.RCR02.001	N	N
AS8950G-2634G75Bnss	DK	LX.RCR02.005	N	N
AS8950G-2634G75Bnss	DE	LX.RCR02.004	N	N
AS8950G-2634G75Mnss	FR	LX.RCR02.002	N	N
AS8950G-2634G75Mnss	TR	LX.RCR02.001	N	N

Table 7-5. Memory 3 & 4 (Continued)

Model	Country	P/N	Memory 3	Memory 4
AS8950G-2634G7 5Wiss	RU	LX.RCR02.007	N	N
AS8950G-2634G8 2Mnss	WW	S2.RCR02.002	N	N
AS8950G-2636G1. 28TWnss	UK	LX.RCN02.013	SO2GBIII10	N
AS8950G-2636G1 TWnss	UK	LX.RCN02.011	N	N
AS8950G-2638G1. 28TMnss	PH	LX.RCN02.022	N	N
AS8950G-2638G1. 28TMnss	PH	LX.RCN07.007	N	N
AS8950G-2638G1. 28TMnss	ES	LX.RCN02.016	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TBnss	DE	LX.RCN02.003	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TBnss	GR	LX.RCN02.020	N	N
AS8950G-2638G1. 5TBnss	IT	LX.RCN02.005	N	N
AS8950G-2638G1. 5TBnss	ME	LX.RCN02.021	N	N
AS8950G-2638G1. 5TMnss	AU/NZ	LX.RCR02.012	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TMnss	ZA	LX.RCN02.024	N	N
AS8950G-2638G1. 5TWiss	RU	LX.RCN02.019	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TWnss	DK	LX.RCN02.018	N	N
AS8950G-2638G1. 5TWnss	FR	LX.RCN02.002	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TWnss	DE	LX.RCN02.007	SO2GBIII10	SO2GBIII10
AS8950G-2638G1. 5TWnss	PH	LX.RCN07.006	N	N
AS8950G-2638G1. 5TWnss	TH	LX.RCN07.001	N	N
AS8950G-2638G1. 5TWnss	UK	LX.RCN02.009	N	N

Table 7-5. Memory 3 & 4 (Continued)

Model	Country	P/N	Memory 3	Memory 4
AS8950G-2638G1 TBnss	DK	LX.RCN02.017	N	N
AS8950G-2638G1 TBnss	DE	LX.RCN02.006	SO2GBIII10	SO2GBIII10
AS8950G-2638G1 TBnss	DE	LX.RCN02.008	SO2GBIII10	SO2GBIII10
AS8950G-2638G1 TBnss	IT	LX.RCN02.004	N	N
AS8950G-2638G1 TMnss	ES	LX.RCN02.015	SO2GBIII10	SO2GBIII10
AS8950G-2728G1. 5TBnss	AU/NZ	LX.RCR02.010	SO2GBIII10	SO2GBIII10
AS8950G-2728G1. 5TMnss	AU/NZ	LX.RCR02.013	SO2GBIII10	SO2GBIII10
AS8950G-2728G1. 5TWnss	AU/NZ	LX.RCR02.011	SO2GBIII10	SO2GBIII10
AS8950G-2728G1. 5TWnss	TH	LX.RCN07.003	N	N
AS8950G-2728G8 9Mnss	WW	S2.RCR07.001	SO2GBIII10	SO2GBIII10
AS8950G-282161. 5TWnss	WW	S2.RCN07.002	SO4GBIII10	SO4GBIII10
AS8950G-282161T Wnss	WW	S2.RCN07.001	SO4GBIII10	SO4GBIII10

Table 7-6. HDD 1 & 2

Model	Country	P/N	HDD 1(GB)	HDD 2(GB)
AS8950G-263121. 5TBnss	ME	LX.RCN02.012	N750GB5.4KS	N750GB5.4KS
AS8950G-263121. 5TWnss	UK	LX.RCN02.010	N750GB5.4KS	N750GB5.4KS
AS8950G-263161. 5TWnss	AT	LX.RCN02.023	N750GB5.4KS	N750GB5.4KS
AS8950G-263161. 5TWnss	TH	LX.RCN07.002	N750GB5.4KS	N750GB5.4KS
AS8950G-2634G1 TBnss	FR	LX.RCN02.001	N500GB5.4KS	N500GB5.4KS
AS8950G-2634G1 TBnss	GCTWN	LX.RCR02.009	N500GB5.4KS	N500GB5.4KS

Table 7-6. HDD 1 & 2 (Continued)

Model	Country	P/N	HDD 1(GB)	HDD 2(GB)
AS8950G-2634G1 TMnss	GCTWN	LX.RCR02.006	N500GB5.4KS	N500GB5.4KS
AS8950G-2634G1 TMnss	ES	LX.RCN02.014	N500GB5.4KS	N500GB5.4KS
AS8950G-2634G6 4Bnss	UK	LX.RCR02.003	N640GB5.4KS	N
AS8950G-2634G6 4Bnss	UK	LX.RCR02.008	N640GB5.4KS	N
AS8950G-2634G6 6Mnss	WW	S2.RCR02.001	N500GB5.4KS	N160GB5.4KS
AS8950G-2634G7 5Bnss	DK	LX.RCR02.005	N750GB5.4KS	N
AS8950G-2634G7 5Bnss	DE	LX.RCR02.004	N750GB5.4KS	N
AS8950G-2634G7 5Mnss	FR	LX.RCR02.002	N750GB5.4KS	N
AS8950G-2634G7 5Mnss	TR	LX.RCR02.001	N750GB5.4KS	N
AS8950G-2634G7 5Wiss	RU	LX.RCR02.007	N750GB5.4KS	N
AS8950G-2634G8 2Mnss	WW	S2.RCR02.002	N500GB5.4KS	N320GB5.4KS_4K
AS8950G-2636G1. 28TWnss	UK	LX.RCN02.013	N640GB5.4KS	N640GB5.4KS
AS8950G-2636G1 TWnss	UK	LX.RCN02.011	N500GB5.4KS	N500GB5.4KS
AS8950G-2638G1. 28TMnss	PH	LX.RCN02.022	N640GB5.4KS	N640GB5.4KS
AS8950G-2638G1. 28TMnss	PH	LX.RCN07.007	N640GB5.4KS	N640GB5.4KS
AS8950G-2638G1. 28TMnss	ES	LX.RCN02.016	N640GB5.4KS	N640GB5.4KS
AS8950G-2638G1. 5TBnss	DE	LX.RCN02.003	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1. 5TBnss	GR	LX.RCN02.020	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1. 5TBnss	IT	LX.RCN02.005	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1. 5TBnss	ME	LX.RCN02.021	N750GB5.4KS	N750GB5.4KS

Table 7-6. HDD 1 & 2 (Continued)

Model	Country	P/N	HDD 1(GB)	HDD 2(GB)
AS8950G-2638G1.5TMnss	AU/NZ	LX.RCR02.012	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1.5TMnss	ZA	LX.RCN02.024	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1.5TWiss	RU	LX.RCN02.019	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1.5TWnss	DK	LX.RCN02.018	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1.5TWnss	FR	LX.RCN02.002	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1.5TWnss	DE	LX.RCN02.007	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1.5TWnss	PH	LX.RCN07.006	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1.5TWnss	TH	LX.RCN07.001	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1.5TWnss	UK	LX.RCN02.009	N750GB5.4KS	N750GB5.4KS
AS8950G-2638G1TBnss	DK	LX.RCN02.017	N500GB5.4KS	N500GB5.4KS
AS8950G-2638G1TBnss	DE	LX.RCN02.006	N500GB5.4KS	N500GB5.4KS
AS8950G-2638G1TBnss	DE	LX.RCN02.008	N500GB5.4KS	N500GB5.4KS
AS8950G-2638G1TBnss	IT	LX.RCN02.004	N500GB5.4KS	N500GB5.4KS
AS8950G-2638G1TMnss	ES	LX.RCN02.015	N500GB5.4KS	N500GB5.4KS
AS8950G-2728G1.5TBnss	AU/NZ	LX.RCR02.010	N750GB5.4KS	N750GB5.4KS
AS8950G-2728G1.5TMnss	AU/NZ	LX.RCR02.013	N750GB5.4KS	N750GB5.4KS
AS8950G-2728G1.5TWnss	AU/NZ	LX.RCR02.011	N750GB5.4KS	N750GB5.4KS
AS8950G-2728G1.5TWnss	TH	LX.RCN07.003	N750GB5.4KS	N750GB5.4KS
AS8950G-2728G89Mnss	WW	S2.RCR07.001	N640GB5.4KS	N250GB5.4KS
AS8950G-282161.5TWnss	WW	S2.RCN07.002	N750GB5.4KS	N750GB5.4KS

Table 7-6. HDD 1 & 2 (Continued)

Model	Country	P/N	HDD 1(GB)	HDD 2(GB)
AS8950G-282161T Wnss	WW	S2.RCN07.001	N750GB5.4KS	N250GB5.4KS

Table 7-7. ODD, Wireless LAN

Model	Country	P/N	ODD	Wireless LAN1
AS8950G-263121. 5TBnss	ME	LX.RCN02.012	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-263121. 5TWnss	UK	LX.RCN02.010	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-263161. 5TWnss	AT	LX.RCN02.023	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-263161. 5TWnss	TH	LX.RCN07.002	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-2634G1 TBnss	FR	LX.RCN02.001	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2634G1 TBnss	GCTWN	LX.RCR02.009	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2634G1 TMnss	GCTWN	LX.RCR02.006	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2634G1 TMnss	ES	LX.RCN02.014	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2634G6 4Bnss	UK	LX.RCR02.003	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2634G6 4Bnss	UK	LX.RCR02.008	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2634G6 6Mnss	WW	S2.RCR02.001	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2634G7 5Bnss	DK	LX.RCR02.005	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2634G7 5Bnss	DE	LX.RCR02.004	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2634G7 5Mnss	FR	LX.RCR02.002	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2634G7 5Mnss	TR	LX.RCR02.001	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2634G7 5Wiss	RU	LX.RCR02.007	NBDRW4XS	3rd WiFi BG
AS8950G-2634G8 2Mnss	WW	S2.RCR02.002	NSM8XS	3rd WiFi 2x2 BGN

Table 7-7. ODD, Wireless LAN (Continued)

Model	Country	P/N	ODD	Wireless LAN1
AS8950G-2636G1. 28TWnss	UK	LX.RCN02.013	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-2636G1 TWnss	UK	LX.RCN02.011	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 28TMnss	PH	LX.RCN02.022	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 28TMnss	PH	LX.RCN07.007	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 28TMnss	ES	LX.RCN02.016	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TBnss	DE	LX.RCN02.003	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TBnss	GR	LX.RCN02.020	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TBnss	IT	LX.RCN02.005	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TBnss	ME	LX.RCN02.021	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TMnss	AU/NZ	LX.RCR02.012	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TMnss	ZA	LX.RCN02.024	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TWiss	RU	LX.RCN02.019	NBDRW4XS	3rd WiFi BG
AS8950G-2638G1. 5TWnss	DK	LX.RCN02.018	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TWnss	FR	LX.RCN02.002	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TWnss	DE	LX.RCN02.007	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TWnss	PH	LX.RCN07.006	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TWnss	TH	LX.RCN07.001	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1. 5TWnss	UK	LX.RCN02.009	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1 TBnss	DK	LX.RCN02.017	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1 TBnss	DE	LX.RCN02.006	NBDCB4XS	3rd WiFi 2x2 BGN

Table 7-7. ODD, Wireless LAN (Continued)

Model	Country	P/N	ODD	Wireless LAN1
AS8950G-2638G1 TBnss	DE	LX.RCN02.008	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1 TBnss	IT	LX.RCN02.004	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2638G1 TMnss	ES	LX.RCN02.015	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2728G1. 5TBnss	AU/NZ	LX.RCR02.010	NBDCB4XS	3rd WiFi 2x2 BGN
AS8950G-2728G1. 5TMnss	AU/NZ	LX.RCR02.013	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-2728G1. 5TWnss	AU/NZ	LX.RCR02.011	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-2728G1. 5TWnss	TH	LX.RCN07.003	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-2728G8 9Mnss	WW	S2.RCR07.001	NSM8XS	3rd WiFi 2x2 BGN
AS8950G-282161. 5TWnss	WW	S2.RCN07.002	NBDRW4XS	3rd WiFi 2x2 BGN
AS8950G-282161T Wnss	WW	S2.RCN07.001	NBDRW4XS	3rd WiFi 2x2 BGN

Table 7-8. Bluetooth, NB Chipset

Model	Country	P/N	Bluetooth	NB Chipset
AS8950G-263121.5TBnss	ME	LX.RCN02.012	BT 3.0	HM65
AS8950G-263121.5TWnss	UK	LX.RCN02.010	BT 3.0	HM65
AS8950G-263161.5TWnss	AT	LX.RCN02.023	BT 3.0	HM65
AS8950G-263161.5TWnss	TH	LX.RCN07.002	BT 3.0	HM65
AS8950G-2634G1TBnss	FR	LX.RCN02.001	BT 3.0	HM65
AS8950G-2634G1TBnss	GCTWN	LX.RCR02.009	BT 3.0	HM65
AS8950G-2634G1TMnss	GCTWN	LX.RCR02.006	BT 3.0	HM65
AS8950G-2634G1TMnss	ES	LX.RCN02.014	N	HM65
AS8950G-2634G64Bnss	UK	LX.RCR02.003	N	HM65
AS8950G-2634G64Bnss	UK	LX.RCR02.008	BT 3.0	HM65
AS8950G-2634G66Mnss	WW	S2.RCR02.001	BT 3.0	HM65
AS8950G-2634G75Bnss	DK	LX.RCR02.005	BT 3.0	HM65
AS8950G-2634G75Bnss	DE	LX.RCR02.004	BT 3.0	HM65
AS8950G-2634G75Mnss	FR	LX.RCR02.002	BT 3.0	HM65

Table 7-8. Bluetooth, NB Chipset (Continued)

Model	Country	P/N	Bluetooth	NB Chipset
AS8950G-2634G75Mnss	TR	LX.RCR02.001	BT 3.0	HM65
AS8950G-2634G75Wiss	RU	LX.RCR02.007	BT 3.0	HM65
AS8950G-2634G82Mnss	WW	S2.RCR02.002	BT 3.0	HM65
AS8950G-2636G1.28TWnss	UK	LX.RCN02.013	BT 3.0	HM65
AS8950G-2636G1TWnss	UK	LX.RCN02.011	BT 3.0	HM65
AS8950G-2638G1.28TMnss	PH	LX.RCN02.022	BT 3.0	HM65
AS8950G-2638G1.28TMnss	PH	LX.RCN07.007	BT 3.0	HM65
AS8950G-2638G1.28TMnss	ES	LX.RCN02.016	N	HM65
AS8950G-2638G1.5TBnss	DE	LX.RCN02.003	BT 3.0	HM65
AS8950G-2638G1.5TBnss	GR	LX.RCN02.020	N	HM65
AS8950G-2638G1.5TBnss	IT	LX.RCN02.005	BT 3.0	HM65
AS8950G-2638G1.5TBnss	ME	LX.RCN02.021	BT 3.0	HM65
AS8950G-2638G1.5TMnss	AU/NZ	LX.RCR02.012	BT 3.0	HM65
AS8950G-2638G1.5TMnss	ZA	LX.RCN02.024	BT 3.0	HM65
AS8950G-2638G1.5TWiss	RU	LX.RCN02.019	BT 3.0	HM65
AS8950G-2638G1.5TWnss	DK	LX.RCN02.018	BT 3.0	HM65
AS8950G-2638G1.5TWnss	FR	LX.RCN02.002	BT 3.0	HM65
AS8950G-2638G1.5TWnss	DE	LX.RCN02.007	BT 3.0	HM65
AS8950G-2638G1.5TWnss	PH	LX.RCN07.006	BT 3.0	HM65
AS8950G-2638G1.5TWnss	TH	LX.RCN07.001	BT 3.0	HM65
AS8950G-2638G1.5TWnss	UK	LX.RCN02.009	BT 3.0	HM65
AS8950G-2638G1TBnss	DK	LX.RCN02.017	BT 3.0	HM65
AS8950G-2638G1TBnss	DE	LX.RCN02.006	N	HM65
AS8950G-2638G1TBnss	DE	LX.RCN02.008	BT 3.0	HM65
AS8950G-2638G1TBnss	IT	LX.RCN02.004	BT 3.0	HM65
AS8950G-2638G1TMnss	ES	LX.RCN02.015	N	HM65
AS8950G-2728G1.5TBnss	AU/NZ	LX.RCR02.010	BT 3.0	HM65
AS8950G-2728G1.5TMnss	AU/NZ	LX.RCR02.013	BT 3.0	HM65
AS8950G-2728G1.5TWnss	AU/NZ	LX.RCR02.011	BT 3.0	HM65
AS8950G-2728G1.5TWnss	TH	LX.RCN07.003	BT 3.0	HM65
AS8950G-2728G89Mnss	WW	S2.RCR07.001	BT 3.0	HM65
AS8950G-282161.5TWnss	WW	S2.RCN07.002	BT 3.0	HM65
AS8950G-282161TWnss	WW	S2.RCN07.001	BT 3.0	HM65

CHAPTER 8
Test Compatible Components

Microsoft® Windows® 7 Environment Test 8-4

Test Compatible Components

This computer's compatibility is tested and verified by Acer's internal testing department. All of its system functions are tested under Windows® 7 environment.

Refer to the following lists for components, adapter cards, and peripherals which have passed these tests. Regarding configuration, combination and test procedures, please refer to the Acer AS8950G. Compatibility Test Report released by the Acer Mobile System Testing Department.

Table 8-1. Test Compatible Components

Vendor	Type	Description	P/N
2nd HDD			
60001922 TOSHIBA DIGI	N160GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 160GB MK1665GSX, Capricorn BS, 320G/P SATA 8MB LF F/W:GJ002J	KH.16004.008
60001922 TOSHIBA DIGI	N250GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 250GB MK2565GSX, Capricorn BS, 320G/P SATA 8MB LF F/W:GJ002J	KH.25004.005
60001922 TOSHIBA DIGI	N320GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 320GB Capricorn BS,MK3265GSX SATA 8MB LF F/W:GJ002J	KH.32004.004
60001922 TOSHIBA DIGI	N500GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 500GB MK5065GSX,Capricorn BS, 320G/P SATA 8MB LF F/W:GJ002J	KH.50004.002
60001922 TOSHIBA DIGI	N640GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 640GB MK6465GSX,Capricorn BS,320G/P SATA 8MB LF F/W:GJ002J	KH.64004.001
60001994 WD	N160GB5.4KS	HDD WD 2.5" 5400rpm 160GB WD1600BEVT-22A23T0, WD, ML320S SATA 8MB LF F/W:01.01A01	KH.16008.027
60001994 WD	N250GB5.4KS	HDD WD 2.5" 5400rpm 250GB WD2500BEVT-22A23T0, WD, ML320S SATA 8MB LF F/W:01.01A01.	KH.25008.025
60001994 WD	N320GB5.4KS	HDD WD 2.5" 5400rpm 320GB WD3200BEVT-22A23T0,ML320S, WD SATA 8MB LF F/W:01.01A01	KH.32008.019
60001994 WD	N320GB5.4KS_4K	HDD WD 2.5" 5400rpm 320GB WD3200BPVT-22ZEST0, ML320S, 4K drive SATA 8MB LF F/W: 01.01A01	KH.32008.022
60001994 WD	N500GB5.4KS	HDD WD 2.5" 5400rpm 500GB WD5000BEVT-22A0RT0, ML320M,WD SATA 8MB LF F/W:01.01A01	KH.50008.017

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
60001994 WD	N640GB5.4KS	HDD WD 2.5" 5400rpm 640GB WD6400BEVT-22A0RT0, ML320 SATA 8MB LF F/W:01.01A01	KH.64008.004
60001994 WD	N750GB5.4KS	HDD WD 2.5" 5400rpm 750GB WD7500BPVT-22HXZT1, ML375M, 4K drive SATA 8MB LF F/W:01.01A01	KH.75008.009
60002005 HGST SG	N160GB5.4KS	HDD HGST 2.5" 5400rpm 160GB HTS545016B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.16007.026
60002005 HGST SG	N250GB5.4KS	HDD HGST 2.5" 5400rpm 250GB HTS545025B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.25007.016
60002005 HGST SG	N320GB5.4KS	HDD HGST 2.5" 5400rpm 320GB HTS545032B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.32007.008
60002005 HGST SG	N320GB5.4KS	HDD HGST 2.5" 5400rpm 320GB HTS543232L9A300 Falcon B SATA LF F/W:C40C Disk imbalance criteria = 0.014g-cm	KH.32007.009
60002005 HGST SG	N500GB5.4KS	HDD HGST 2.5" 5400rpm 500GB HTS545050B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.50007.010
60002036 SEAGATE	N160GB5.4KS	HDD SEAGATE 2.5" 5400rpm 160GB ST9160314AS Wyatt SATA LF F/W:0001SDM1	KH.16001.042
60002036 SEAGATE	N250GB5.4KS	HDD SEAGATE 2.5" 5400rpm 250GB ST9250315AS Wyatt SATA LF F/W:0001SDM1	KH.25001.016
60002036 SEAGATE	N320GB5.4KS	HDD SEAGATE 2.5" 5400rpm 320GB ST9320325AS Wyatt SATA LF F/W:0001SDM1	KH.32001.017
60002036 SEAGATE	N500GB5.4KS	HDD SEAGATE 2.5" 5400rpm 500GB ST9500325AS Wyatt SATA LF F/W:0001SDM1	KH.50001.011
Adapter			
10001023 LITE-ON	90W	Adapter LITE-ON 90W 19V 1.7x5.5x11 Blue PA-1900-34AR, LV5 LED LF	AP.09003.021

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
10001023 LITE-ON	120W-DE	Adapter LITE-ON 120W-DE 19V 1.7x5.5x11 Green PA-1121-04AC, LV5+OBL LED LF	AP.12003.003
10001081 DELTA	90W	Adapter DELTA 90W 19V 1.7x5.5x11 Blue ADP-90CD DB A, LV5 LED LF	AP.09001.027
10001081 DELTA	120W-DE	Adapter DELTA 120W-DE 19V 1.7x5.5x11 Green ADP-120ZB BBGB, LV5+OBL LED LF	AP.12001.009
Audio Codec			
10004786 REALTEK	ALC669X	Realtek ALC669X	LZ.21000.060
Battery			
60001535 PANASONIC	8CELL3.0	Battery PANASONIC AS10C Li-Ion 4S2P PANASONIC 8 cell 6000mAh Main COMMON ID:AS10C5E	BT.00805.015
60002162 SIMPLO	8CELL3.0	Battery SIMPLO AS10C Li-Ion 4S2P SAMSUNG 8 cell 6000mAh Main COMMON ID:AS10C7E	BT.00807.028
Bluetooth			
10001018 HON HAI	BT 3.0	Foxconn Bluetooth BRM 2046 BT3.0 (T60H928.33) f/w:861	BH.21100.008
10001018 HON HAI	BT 3.0	Foxconn Bluetooth ATH AR3011 (BT3.0)	BH.21100.009
10001018 HON HAI	BT 3.0	Foxconn Bluetooth BRM 2070 (T77H114.01) BT 3.0	BH.21100.010
10001018 HON HAI	BT 3.0	Foxconn Bluetooth ATH BU12	BH.21100.011
23707801 FOXCONN TW	BT 2.1	Foxconn Bluetooth BRM 2046 BT2.1 (T60H928.33) f/w:861	BH.21100.004
23707801 FOXCONN TW	BT 2.1	Foxconn Bluetooth ATH AR3011	BH.21100.005
23707801 FOXCONN TW	BT 2.1	Foxconn Bluetooth BRM 2070 (T77H114.01)	BH.21100.007
Camera			
10001023 LITE-ON	1.3M	Liteon 1.3M LT9665AL (09P2SF119)	AM.21400.069
10001023 LITE-ON	1.3M	Liteon 1.3M LT6AASP (09P2BF127)	AM.21400.070

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
10001044 CHICONY	1.3M	Chicony 1.3M CH9665SN (CNF9157)	AM.21400.067
PLM00012 Suyin	1.3M	Suyin 1.3M SY9665SN	AM.21400.068
Card Reader			
PLM00014 ODM	5 in 1-Build in	5 in 1-Build in MS, MS Pro, SD, SC, XD	CR.21500.013
CPU			
10001067 INTEL	Ci72630QM	CPU Intel Core i7 i7-2630QM PGA 2.0G 45W 4/8	KC.26301.QMP
10001067 INTEL	Ci72720QM	CPU Intel Core i7 i7-2720QM PGA 2.2G 45W 4/8	KC.27201.QMP
10001067 INTEL	Ci72820QM	CPU Intel Core i7 i7-2820QM PGA 2.3G 45W 4/8	KC.28201.QMP
10001067 INTEL	Ci3330M	CPU Intel Core i3 330M PGA 2.13G 35W Arrandale, TJ90, VT, 3M L3	KC.33001.DMP
10001067 INTEL	Ci3350M	CPU Intel Core i3 350M PGA 2.26G 35W Arrandale, TJ90, VT, 3M L3	KC.35001.DMP
10001067 INTEL	Ci3350M	CPU Intel Core i3 350M PGA 2.26G 35W K-0 TJ90, VT	KC.35K01.DMP
10001067 INTEL	Ci3370M	CPU Intel Core i3 370M PGA 2.4G 35W K-0 TJ90, VT	KC.37K01.DMP
10001067 INTEL	Ci3380M	CPU Intel Core i3 380M PGA 2.53G 35W K-0 TJ90, VT	KC.38K01.DMP
10001067 INTEL	Ci5430M	CPU Intel Core i5 430M PGA 2.26G ARD, up to SC 2.53G, 3M L3	KC.43001.DMP
10001067 INTEL	Ci5450M	CPU Intel Core i5 450M PGA 2.4G 35W K-0 up to SC 2.66G	KC.45K01.DMP
10001067 INTEL	Ci5460M	CPU Intel Core i5 460M PGA 2.53G 35W K-0	KC.46K01.DMP
10001067 INTEL	Ci5520M	CPU Intel Core i5 520M 2.4G	KC.52001.DMP
10001067 INTEL	Ci5540M	CPU Intel Core i5 540M 2.53G 3M	KC.54001.DMP
10001067 INTEL	Ci5560M	CPU Intel Core i5 560M PGA 2.66G 35W K-0 Turbo Boost 3.20/2.93	KC.56K01.DMP

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
10001067 INTEL	Ci7620M	CPU Intel Core i7 620M PGA 2.66G	KC.62001.DMP
10001067 INTEL	Ci7640M	CPU Intel Core i7 640M PGA 2.8G 35W K-0 Max DDR3-1066	KC.64K01.DMP
10001067 INTEL	Ci7720QM	CPU Intel Core i7 720QM PGA 1.6G 6M 45W	KC.72001.QMP
10001067 INTEL	Ci7740QM	CPU Intel Core i7 740QM PGA 1.73G 6M 45W	KC.74001.QMP
10001067 INTEL	Ci7820QM	CPU Intel Core i7 820QM 1.73G 1333 45W	KC.82001.QMP
Finger Print			
F0000599 EGIS	SS801U	LTT Finger Print SS801U	FP.22000.007
HDD			
60001922 TOSHIBA DIGI	N160GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 160GB MK1665GSX, Capricorn BS, 320G/P SATA 8MB LF F/W:GJ002J	KH.16004.008
60001922 TOSHIBA DIGI	N250GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 250GB MK2565GSX, Capricorn BS, 320G/P SATA 8MB LF F/W:GJ002J	KH.25004.005
60001922 TOSHIBA DIGI	N320GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 320GB Capricorn BS,MK3265GSX SATA 8MB LF F/W:GJ002J	KH.32004.004
60001922 TOSHIBA DIGI	N500GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 500GB MK5065GSX,Capricorn BS, 320G/P SATA 8MB LF F/W:GJ002J	KH.50004.002
60001922 TOSHIBA DIGI	N640GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 640GB MK6465GSX,Capricorn BS,320G/P SATA 8MB LF F/W:GJ002J	KH.64004.001
60001922 TOSHIBA DIGI	N750GB5.4KS	HDD TOSHIBA 2.5" 5400rpm 750GB MK7559GSX, 375G/P, Capricorn BS, 4K drive SATA 8MB LF+HF F/W:GNDD3J	KH.75004.001
60001994 WD	N160GB5.4KS	HDD WD 2.5" 5400rpm 160GB WD1600BEVT-22A23T0, WD, ML320S SATA 8MB LF F/W:01.01A01	KH.16008.027

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
60001994 WD	N250GB5.4KS	HDD WD 2.5" 5400rpm 250GB WD2500BEVT-22A23T0, WD, ML320S SATA 8MB LF F/W:01.01A01.	KH.25008.025
60001994 WD	N250GB5.4KS	HDD WD 2.5" 5400rpm 250GB WD2500BPVT-22ZEST0,ML320S-AF, 4K drive SATA 8MB LF F/W:01.01A01 4K drive	KH.25008.029
60001994 WD	N320GB5.4KS	HDD WD 2.5" 5400rpm 320GB WD3200BEVT-22A23T0,ML320S, WD SATA 8MB LF F/W:01.01A01	KH.32008.019
60001994 WD	N320GB5.4KS_4K	HDD WD 2.5" 5400rpm 320GB WD3200BPVT-22ZEST0, ML320S, 4K drive SATA 8MB LF F/W: 01.01A01	KH.32008.022
60001994 WD	N500GB5.4KS	HDD WD 2.5" 5400rpm 500GB WD5000BEVT-22A0RT0, ML320M,WD SATA 8MB LF F/W:01.01A01	KH.50008.017
60001994 WD	N500GB5.4KS	HDD WD 2.5" 5400rpm 500GB WD5000BPVT-22HXZT1,ML375_AF, 4K drive SATA 8MB LF+HF F/W:01.01A01	KH.50008.021
60001994 WD	N640GB5.4KS	HDD WD 2.5" 5400rpm 640GB WD6400BEVT-22A0RT0, ML320 SATA 8MB LF F/W:01.01A01	KH.64008.004
60001994 WD	N640GB5.4KS	HDD WD 2.5" 5400rpm 640GB WD6400BPVT-22HXZT1, ML375M SATA 8MB LF F/W: 01.01A01	KH.64008.005
60001994 WD	N750GB5.4KS	HDD WD 2.5" 5400rpm 750GB WD7500BPVT-22HXZT1, ML375M, 4K drive SATA 8MB LF F/W:01.01A01	KH.75008.009
60002005 HGST SG	N160GB5.4KS	HDD HGST 2.5" 5400rpm 160GB HTS545016B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.16007.026
60002005 HGST SG	N250GB5.4KS	HDD HGST 2.5" 5400rpm 250GB HTS545025B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.25007.016

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
60002005 HGST SG	N320GB5.4KS	HDD HGST 2.5" 5400rpm 320GB HTS545032B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.32007.008
60002005 HGST SG	N320GB5.4KS	HDD HGST 2.5" 5400rpm 320GB HTS543232L9A300 Falcon B SATA LF F/W:C40C Disk imbalance criteria = 0.014g-cm	KH.32007.009
60002005 HGST SG	N320GB5.4KS7.0	HDD HGST 2.5" 5400rpm 320GB HTS543232A7A384,0J11523, Eagle B7, 320G/P SATA LF+HF F/W:A60W	KH.32007.013
60002005 HGST SG	N500GB5.4KS	HDD HGST 2.5" 5400rpm 500GB HTS545050B9A300 Panther B SATA LF F/W:C60F Disk imbalance criteria = 0.014g-cm	KH.50007.010
60002036 SEAGATE	N160GB5.4KS	HDD SEAGATE 2.5" 5400rpm 160GB ST9160314AS Wyatt SATA LF F/W:0001SDM1	KH.16001.042
60002036 SEAGATE	N250GB5.4KS	HDD SEAGATE 2.5" 5400rpm 250GB ST9250315AS Wyatt SATA LF F/W:0001SDM1	KH.25001.016
60002036 SEAGATE	N250GB5.4KS	HDD SEAGATE 2.5" 5400rpm 250GB ST9250315AS, 9HH132-189, Wyatt with new pcb SATA 8MB LF F/W:0001SDM1	KH.25001.019
60002036 SEAGATE	N320GB5.4KS	HDD SEAGATE 2.5" 5400rpm 320GB ST9320325AS Wyatt SATA LF F/W:0001SDM1	KH.32001.017
60002036 SEAGATE	N320GB5.4KS	HDD SEAGATE 2.5" 5400rpm 320GB ST9320310AS,9RN132-188, Cameron 320G/P SATA 8MB LF F/W:0001SDM1	KH.32001.019
60002036 SEAGATE	N500GB5.4KS	HDD SEAGATE 2.5" 5400rpm 500GB ST9500325AS Wyatt SATA LF F/W:0001SDM1	KH.50001.011
60002036 SEAGATE	N500GB5.4KS	HDD SEAGATE 2.5" 5400rpm 500GB ST9500325AS,9HH134-189, Wyatt with new pcb SATA 8MB LF F/W:0001SDM1	KH.50001.017

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
Keyboard			
60004864 DARFON	AF7P_A10S	Keyboard ACER AF7P_A10S AF7P Internal 17 Standard Silver NONE Y2010 Acer Legend Painting	KB.I170A.145
LAN			
10004786 REALTEK	RTL8111EA	Realtek RTL8111EA	NI.22400.053
10017383 Atheros	AR8151L	Atheros AR8151L	NI.22400.048
LCD			
10001038 CMO	NLED18.4WUXGA GL	LED LCD CMO 18.4" WUXGA Glare N184H6-L02 LF 220nit 8ms 500:1	LK.1840D.003
MEM			
60002041 QIMONDA	SO1GBIII10	Memory NONE REG-ECC DDRIII 1066 1GB phantom p/n LF	KN.1GB00.003
60002045 HYNIX	SO1GBIII10	Memory HYNIX SO-DIMM DDRIII 1066 1GB HMT112S6BFR6C-G7 N0 LF 64*16 0.055um	KN.1GB0G.025
60002045 HYNIX	SO1GBIII13	Memory HYNIX SO-DIMM DDRIII 1333 1GB HMT112S6TFR8C-H9 LF 128*8 0.055um	KN.1GB0G.026
60002045 HYNIX	SO2GBIII10	Memory HYNIX SO-DIMM DDRIII 1066 2GB HMT125S6BFR8C-G7 N0 LF 128*8 0.055um	KN.2GB0G.014
60002045 HYNIX	SO2GBIII13	Memory HYNIX SO-DIMM DDRIII 1333 2GB HMT125S6TFR8C-H9 LF 128*8 0.055um	KN.2GB0G.016
60002215 SAMSUNG	SO1GBIII10	Memory SAMSUNG SO-DIMM DDRIII 1066 1GB M471B2873EH1-CF8 LF 64*16 0.055um	KN.1GB0B.028
60002215 SAMSUNG	SO1GBIII13	Memory SAMSUNG SO-DIMM DDRIII 1333 1GB M471B2873FHS-CH9 LF 128*8 46nm	KN.1GB0B.035
60002215 SAMSUNG	SO2GBIII10	Memory NONE SO-DIMM DDRIII 1066 2GB dummy 1066 LF	KN.2GB00.001

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
60002215 SAMSUNG	SO2GBIII10	Memory SAMSUNG SO-DIMM DDRIII 1066 2GB M471B5673EH1-CF8 LF 128*8 0.055um	KN.2GB0B.012
60002215 SAMSUNG	SO2GBIII13	Memory SAMSUNG SO-DIMM DDRIII 1333 2GB M471B5673FH0-CH9 LF 128*8 46nm	KN.2GB0B.023
60002215 SAMSUNG	SO2GBIII13	Memory SAMSUNG SO-DIMM DDRIII 1333 2GB M471B5773CHS-CH9 LF 256*8 46nm	KN.2GB0B.026
60002215 SAMSUNG	SO4GBIII10	Memory SAMSUNG SO-DIMM DDRIII 1066 4GB M471B5273BH1-CF8 LF 256*8 0.055um	KN.4GB0B.007
60002215 SAMSUNG	SO4GBIII13	Memory SAMSUNG SO-DIMM DDRIII 1333 4GB M471B5273CH0-CH9 LF 256*8 46nm	KN.4GB0B.010
60004668 ELPIDA	SO1GBIII10	Memory ELPIDA SO-DIMM DDRIII 1066 1GB EBJ10UE8BDS0-AE-F LF 128*8 0.065um	KN.1GB09.012
60004668 ELPIDA	SO1GBIII13	Memory ELPIDA SO-DIMM DDRIII 1333 1GB EBJ10UE8BDS0-DJ-F LF 128*8 0.065um	KN.1GB09.015
60004668 ELPIDA	SO2GBIII10	Memory ELPIDA SO-DIMM DDRIII 1066 2GB EBJ21UE8BDS0-AE-F LF 128*8 0.065um	KN.2GB09.006
60004668 ELPIDA	SO2GBIII13	Memory ELPIDA SO-DIMM DDRIII 1333 2GB EBJ21UE8BDS0-DJ-F LF 128*8 0.065um	KN.2GB09.007
60004668 ELPIDA	SO4GBIII10	Memory NONE SO-DIMM DDRIII 1066 4GB dummy P/N LF	KN.4GB00.001
60004668 ELPIDA	SO4GBIII13	Memory ELPIDA SO-DIMM DDRIII 1333 4GB EBJ41UF8BAS0-DJ-F LF 256*8 0.055um	KN.4GB09.001
NB Chipset			
10001067 INTEL	HM55	NB Chipset Intel CS BD82HM55	KI.G5501.002
10001067 INTEL	HM65	NB Chipset Intel Core i7 HM65 Huron River	KI.G6501.001

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
ODD			
10001063 SONY	NBDCB4XS	ODD SONY BD COMBO 12.7mm Tray DL 4X BC-5500H LF W/O bezel SATA (HF + Windows 7)	KO.0040E.003
10001063 SONY	NBDRW4XS	ODD SONY BD RW 12.7mm Tray 4X BD-5730H-AR LF+HF W/O bezel SATA Supporting Windows 7 + Vista	KU.0040E.001
10001063 SONY	NSM8XS	ODD SONY Super-Multi DRIVE 12.7mm Tray DL 8X AD-7585H LF W/O bezel SATA (HF + Windows 7)	KU.0080E.027
10001070 PHILIPS	NBDCB4XS	ODD PLDS BD COMBO 12.7mm Tray DL 4X DS-4E1S LF W/O bezel SATA (Windows 7)	KO.0040F.003
10001070 PHILIPS	NBDCB4XS	ODD PLDS BD COMBO 12.7mm Tray DL 4X DS-6E2SH LF W/O bezel SATA (HF + Win7 + 3D)	KO.0040F.006
10001070 PHILIPS	NSM8XS	ODD PLDS Super-Multi DRIVE 12.7mm Tray DL 8X DS-8A4SH LF W/O bezel SATA (HF + Windows 7)	KU.0080F.006
10001070 PHILIPS	NSM8XS	ODD PLDS Super-Multi DRIVE 12.7mm Tray DL 8X DS-8A5SH LF+HF W/O bezel SATA With TI + Rohm Solution (HF + Windows 7)	KU.0080F.014
60001535 PANASONIC	NBDCB4XS	ODD PANASONIC BD COMBO 12.7mm Tray DL 4X UJ141AL LF W/O bezel SATA Windows 7	KO.00407.004
60001535 PANASONIC	NBDRW4XS	ODD PANASONIC BD RW 12.7mm Tray DL 4X UJ230A LF W/O bezel FW 1.10 SATA (Windows 7)	KU.00407.014
60001535 PANASONIC	NBDRW4XS	ODD PANASONIC BD RW 12.7mm Tray DL 4X UJ240A LF W/O bezel SATA (HF+Windows 7)	KU.00407.015
60001535 PANASONIC	NSM8XS	ODD PANASONIC Super-Multi DRIVE 12.7mm Tray DL 8X UJ890A LF W/O bezel SATA (HF + Windows 7)	KU.00807.070
60001535 PANASONIC	NSM8XS	ODD PANASONIC Super-Multi DRIVE 12.7mm Tray DL 8X UJ8A0 LF W/O bezel SATA (HF + Windows 7) Foxconn Yentai Factory	KU.00807.075

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
60001922 TOSHIBA DIGI	NSM8XS	ODD TOSHIBA Super-Multi DRIVE 12.7mm Tray DL 8X TS-L633C LF W/O bezel SATA (HF + Windows 7)	KU.00801.035
60001922 TOSHIBA DIGI	NSM8XS	ODD TOSHIBA Super-Multi DRIVE 12.7mm Tray DL 8X TS-L633F LF W/O bezel SATA (HF + Windows 7)	KU.00801.040
60001939 PIONEER	NBDCB4XS	ODD PIONEER BD COMBO 12.7mm Tray DL 4X BDC-TD02RS W/O bezel SATA Windows 7,lack of c-tick/KREMI/FIMKO&SEMKO/TW N EMC	KO.00405.004
60001939 PIONEER	NBDCB4XS	ODD PIONEER BD COMBO 12.7mm Tray DL 4X BDC-TD03RS LF W/O bezel 1.01 SATA (Windows 7)	KO.00405.006
60001939 PIONEER	NSM8XS	ODD PIONEER Super-Multi DRIVE 12.7mm Tray DL 8X DVR-TD10RS LF W/O bezel 1.00 SATA	KU.00805.049
60003901 HITACHI EAST	NSM8XS	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X GT34N LF W/O bezel SATA Zero Power Supported, PCC LD (HF + Windows 7)	KU.0080D.057
610105 HLDS	NBDCB4XS	ODD HLDS BD COMBO 12.7mm Tray DL 4X CT21N LF W/O bezel 1.00 SATA (HF + Windows 7)	KO.0040D.004
610105 HLDS	NSM8XS	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X GT30N LF W/O bezel SATA (HF + Windows 7)	KU.0080D.048
610105 HLDS	NSM8XS	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X GT31N (R5-1) LF W/O bezel SATA with Renesas Solution (HF + Windows 7)	KU.0080D.054
610105 HLDS	NSM8XS	ODD HLDS Super-Multi DRIVE 12.7mm Tray DL 8X GT32N (R5-2) LF W/O bezel SATA with Renesas solution + PCC LD (HF + Windows 7)	KU.0080D.055
SB Chipset			
9999995 ONE TIME VENDER	N	N	KI.22800.011

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
TV Antenna			
10000981 MISC	Passive Antenna	Avermedia Di-Pole passive TV Antenna	LZ.23000.004
TV Tuner			
10001023 LITE-ON	DVB-T Mini-card	DVB-T Mini-card TT-1260DA w/DiBCOM DIB7070P+DiB0700C rev.D	TU.23100.015
10001023 LITE-ON	DVB-T Mini-card	DVB-T Mini-card TT-1280DA w/DiBCOM DIB7770 Half-size minicard	TU.23100.024
USB Controller			
10000981 MISC	USB 3.0	USB Controller USB 3.0	LC.24500.001
VGA Chip			
22554573 AMD	MADISON_PRO	VGA Chip AMD MADISON_PRO 100-CK3625 40nm 29mm*29mm M2 package	KI.23200.169
22554573 AMD	BROADWAY_PRO	VGA Chip AMD BROADWAY_PRO 100-CK3623 40nm 29mm*29mm M2 package	KI.23200.172
60002168 AMDISS	GRANVILE_PRO	VGA Chip AMD GRANVILE_PRO 40nm 29mm*29mm M2 package	KG.GRA0A.001
60002168 AMDISS	WHISTLER_PRO	VGA Chip AMD WHISTLER_PRO 40nm 29mm*29mm M2 package	KG.WHI0A.001
VRAM			
10000981 MISC	1G-DDR3 (64*16*8)	1G-DDR3 64*16*8	KI.23300.018
10000981 MISC	512M-DDR3 (64*16*4)	512M-DDR3 64*16*4	KI.23300.019
10000981 MISC	2G-DDR3 (128*16*8)	2G-DDR3 128*16*8	KI.23300.028
60002045 HYNIX	VR1GbIII8	VRAM HYNIX Graphic DDRIII 800 1Gb H5TQ1G63BFR-12C LF	VR.1GB0G.004
60002045 HYNIX	VR1GbIII9	VRAM HYNIX Graphic DDRIII 900 1Gb H5TQ1G63DFR-11C LF 64*16 46nm	VR.1GB0G.006
60002045 HYNIX	VR2GbIII8	VRAM HYNIX Graphic DDRIII 800 2Gb H5TQ2G63BFR-12C LF+HF	VR.2GB0G.001
60002215 SAMSUNG	VR1GbIII8	VRAM SAMSUNG Graphic DDRIII 800 1Gb K4W1G1646E-HC12 LF	VR.1GB0B.006

Table 8-1. Test Compatible Components (Continued)

Vendor	Type	Description	P/N
60002215 SAMSUNG	VR1GbIII9	VRAM SAMSUNG Graphic DDRIII 900 1Gb K4W1G1646G-BC11 LF 64*16 35nm	VR.1GB0B.008
WiFi Antenna			
10000105 WNC	PIFA	PIFA	LZ.23500.006
10000105 WNC	PIFA 3x3	WNC WiFi/WiMAX antenna 3x3	LZ.23500.010
Wireless LAN			
10001023 LITE-ON	3rd WiFi 2x2 BGN	Liteon Wireless LAN Atheros HB97 2x2 BGN (HM) WN6603AH	NI.23600.073
10001067 INTEL	INT1000H	Lan Intel WLAN 112BN.HMWG MM#903341	KI.CPH01.001
10001067 INTEL	INT1000H_BG	Lan Intel WLAN INT1000HBG	KI.CPH01.002
23707801 FOXCONN TW	3rd WiFi BG	Foxconn Wireless LAN Atheros HB95 1x1 BG (HM)	NI.23600.047
23707801 FOXCONN TW	3rd WiFi BG	Foxconn Wireless LAN Broadcom 4312H BG (HM)	NI.23600.053
23707801 FOXCONN TW	3rd WiFi 2x2 BGN	Foxconn Wireless LAN Atheros HB93 2x2 BGN (HM)	NI.23600.062
23707801 FOXCONN TW	3rd WiFi 2x2 BGN	Foxconn Wireless LAN Broadcomm 43225 2x2 BGN (HM) T77H103.00	NI.23600.066
23707801 FOXCONN TW	3rd WiFi 2x2 BGN	Foxconn Wireless LAN Atheros HB97 2x2 BGN (HM)	NI.23600.072
23707801 FOXCONN TW	3rd WiFi BG	Foxconn Wireless LAN Atheros HB95BG (HM) T77H121.10	NI.23600.077

CHAPTER 9
Online Support Information

Introduction 9-3

Online Support Information

Introduction

This section describes online technical support services available to help users repair their Acer Systems.

For distributors, dealers, ASP or TPM, refer the technical queries to a local Acer branch office. Acer Branch Offices and Regional Business Units may access our website. However some information sources will require a user i.d. and password. These can be obtained directly from Acer CSD Taiwan.

Acer's Website offers convenient and valuable support resources.

In the Technical Information section users can download information on all of Acer’s Notebook, Desktop and Server models including:

- Service guides for all models
- BIOS updates
- Software utilities
- Spare parts lists
- TABs (Technical Announcement Bulletin)

For these purposes, we have included an Acrobat File to facilitate the problem-free downloading of our technical material.

Also contained on this website are:

- Detailed information on Acer's International Traveller’s Warranty (ITW)
- Returned material authorization procedures
- An overview of all the support services we offer, accompanied by a list of telephone, fax and e-mail contacts for all technical queries.

We are always looking for ways to optimize and improve our services, so do not hesitate to direct any suggestions or comments to us.